Northern Mineral Policy Series

NM 1: Mines and Important Mineral Deposits of the Yukon and Northwest Territories, 1982

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Communiqué

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NORTHERN MINERAL POLICY SERIES RELEASED

OTTAWA (July 27, 1984) -- The first volume of the Northern Mineral Policy Series was publicly released today by the Hon. Douglas C. Frith, Minister of Indian Affairs and Northern Development. The eight volume series discusses the major issues confronting the mining industry in Yukon and Northwest Territories.

"These reports represent one phase of the continuing consultation process in the development of a northern mineral policy which the government hopes to introduce later this year," said Mr. Frith. "The series addresses issues which are of vital importance in developing a policy framework for the industry. It is my hope, by publishing the series, that northerners and all others concerned with the northern mineral industry will gain a common understanding of the challenges facing the industry and be better prepared to discuss the actions which government should take."

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The Northern Mineral Policy Series of reports is part of a long consultative process undertaken by the Mining Management and Infrastructure Directorate of Indian and Northern Affairs Canada. Work has been underway since autumn 1981, when the Minister first announced that a policy was being formulated.

As a preliminary stage in the development of the policy, departmental officials embarked on an exchange of views with key interest groups. These included the territorial governments, industry, labour, native groups and environmentalists as well as other federal departments. That process resulted in the identification of certain priority issues, considered vital to the future viability of the mining industry which were the object of extensive study both within the department and by consultants. The Northern Mineral Policy Series presents a concise summary of data and a discussion of several major issues.

As each volume in the series becomes available, they will be distributed from three centres. Copies will be available from the Regional Offices of the Northern Affairs Program in Whitehorse and Yellowknife, or directly from the Mining Management and Infrastructure Directorate, Indian and Northern Affairs Canada, Ottawa, Ontario K1A 0H4.

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Publication of the series will be done on a staggered basis but all eight volumes, in both official languages, should be available by the autumn.

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Attached: List of Titles

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NORTHERN MINERAL POLICY SERIES

List of Titles

NM 1: Mines and Important Mineral Deposits of the Yukon and Northwest Territories, 1982*

NM 2: Northern Mining Overview

NM 3 Northern Mining Communities

NM 4 The Governmental Framework for Northern Mining

NM 5 Northern Mineral Legislation

NM 6 Infrastructure and Mineral Development

NM 7 The Human Dimension in Mining

NM 8 Mineral Industry Incentive Programs and Services

*Now available

Northern Mineral Policy Series

NM 1: Mines and Important Mineral Deposits of the Yukon and Northwest Territories, 1982

Northern Affairs Program

Northern Resources and Economic
Planning Branch

This report was prepared by officials of the
Mining Management and
Infrastructure Directorate

Published under the authority of the
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Exploration and mining have traditionally played a key role in the economic development of the North. To ensure that the industry maintains this position, a northern mineral policy is now being prepared by the federal Department of Indian Affairs and Northern Development. Its successful implementation will depend to a large extent on the ongoing dialogue between those affected by such a policy and those responsible for its development. Therefore, as part of the consultative process now under way, I am pleased to present one of eight volumes in the northern mineral policy series.

The northern mineral policy will provide a framework for industry's sustained growth over the next decade. My intention is to clearly indicate what role the federal government is prepared to take in order to help the industry remain competitive and attract the necessary domestic and foreign investment. To achieve these goals, it is essential to develop a spirit of common purpose among those concerned about the future vitality of this industry. In Yukon and Northwest Territories, this includes federal, territorial and local governments; industry; labour; native groups; environmentalists; indeed, every concerned northern citizen.

I believe that to achieve consensus, all of these diverse groups must have a common understanding of the industry. The northern mineral policy series, by marshalling relevant data and presenting concise discussion of the major issues, can make a significant contribution to this information exchange.

Individual volumes were prepared by the staff of the Mining Management and Infrastructure Directorate of the Department's Northern Affairs Program. In some cases this was supplemented by work contracted to consultants.

This particular volume, entitled *Mines and Important Mineral Deposits of the Yukon and Northwest Territories, 1982,* was prepared by Dr. D.D. Brown and T.W. Caine of the Mining Resources Section. It discusses mineral deposits of the North, their geological environment and origin.

John C. Munro

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CHAPTER 1

MINES AND IMPORTANT MINERAL DEPOSIT OF THE YUKON AND NORTHWEST TERRITORIES

INTRODUCTION

The Yukon and Northwest Territories comprise 40 per cent of Canada's land area. This vast region, called the North, contains a wide variety of geological environments, and a number of important metallogenic provinces. The North hosts both important mineral deposits currently being mined and other deposits of significance for future exploration and development.

The mining industry is the principal non-governmental activity in both the Yukon and Northwest Territories. In the Yukon Territory, mining production during 1982 came from three lode mines and in excess of 200 placer gold mines. Production was valued at $169 million. In the Northwest Territories, during 1982, mineral production came from ten lode mines and was valued at $468 million.

Both Territories are richly endowed with mineral resources but this mineral potential has only been defined in a preliminary manner as most of the North has not been intensively explored.

The purpose of this report is to provide an overview of the geological and mineral resource framework of this region "north of 60° latitude". The report discusses the mineral deposits of the North, their geological environments and origins.

The first chapter of this report contains a summary description or overview of the characteristics of the geological structural provinces, the geological domaines within the geological structural provinces, and the metallic and non-metallic mineral deposits, which are of significance with respect to the Northern mining industry and future discovery and development of mineral resources. The report refers in a qualitative manner to areas of high mineral resource potential.

The second chapter of this report is a tabulated inventory of the mine reserves and important mineral deposit resources in the North that are described, for the most part, in the first chapter. These deposits include ferrous and non-ferrous minerals, industrial minerals and coal deposits. They extend over a broad range, from significant occurrences or prospects which may indicate the presence of larger deposits, to economic mineral deposits currently being mined or under development.

Mine reserves are those, obtained from company reports, mining publications and other sources, which were economic at the time the reserves were reported. Other resources compiled in the table of mineral deposits are identified resources, some of which may become economically "mineable reserves" in future.

STRUCTURAL PROVINCES

The North has been divided into seven distinct geological subdivisions termed "structural provinces". Each is distinct with respect to structural style and orogenic history. They are separated for the most part by structural discontinuties including unconformities and orogenic fronts.

The Northwest Territories is comprised of a core region, the Precambian Shield, which is bordered by younger relatively flat lying Phanerozoic sedimentary rocks, which unconformably overlie the shield rocks. The structural provinces of bordering Phanerozoic rocks are the Interior Platform, Arctic Platform and Hudson Platform, which respectively form the western, northern and eastern regions of the Northwest Territories. The Precambrian Shield has in turn been divided into three structural provinces based on structural criteria and the relative ages of rocks determined by isotopic dating. These provinces are the Bear Province, Slave Province and Churchill Province. The boundaries between these provinces are drawn where one structural trend is truncated by another either along major unconformities or in their absence, along orogenic fronts. In the northwest, bordering the Interior Platform, the Cordilleran Province is a district region resulting from a complex geological history. It extends northward from the Cordillera of British Columbia, through the Yukon and embraces the Mackenzie Fold Belt of the Northwest Territories.

The Arctic Archipelago to the north of the Precambrian Shield is comprised of a number of structural provinces including the Arctic Platform and parts of the Precambrian Shield mentioned previously. In the High Arctic, the Innuitian Province, forms the sixth structural province. It consists of vast thickness of Phanerozoic sediments which form the Sverdrup Basin and Franklinian Geosyncline. The former basin is comprised of an essentially concordant succession of formations ranging in age from Lower Carboniferous to Upper Cretaceous, that were unconformably superimposed on the folded Franklinian Geosyncline. Originally a simple crustal despression, the Sverdrup Basin was folded into a great synclinorium during the Cenozoic Eurekian Orogeny. Folded Franklinian sequences border the Sverdrup Basin on the east and south.

The seventh and youngest structural province is the Arctic Coastal Plain in the western Arctic Archipelago. It is comprised of gently seaward-dipping late Cenozoic strata, which extend into the Arctic Ocean and Beaufort Sea.

GEOLOGICAL DOMAINES AND METALLOGENIC PROVINCES

The seven structural provinces of the North have been subdivided in this report into 51 subdivisions called geological domaines. Some of the geological domaines are property termed subprovinces in that they are distinct geographic subdivisions of a province. An example is in the East Arm of Great Slave Lake where the Athapuscow Aulacogen(24)* forms a subprovince of the Bear Province. Other domaines correspond closely to classic subdivisions of certain provinces, such as the Selwyn Basin (7) of Cordilleran Province.

Some of the structural provinces and geological domaines within the provinces constitute metallogenic provinces or mineral provinces. Metallogenic provinces are regions characterized by a particular assemblage of mineral deposits and relatively abundant mineralization of which one or more characteristic types predominate. A metallogenic province may contain more than one episode of mineralization or metallogenic epoch. Three types of metallogenic provinces may be distinguished on a broad scale, with respect to tectonic environments; those associated with Precambrian shields, those associated with Phanerozoic orogenic belts and those associated with stable platforms. All three types of metallogenic provinces are present in the North and within each, the significance of the mineral potential is indicated by the characteristics of the identified resources.

CORDILLERAN STRUCTURAL PROVINCE

The Cordilleran Province extends through the entire Yukon and the continguous Mackenzie Fold Belt Region (8) of the Northwest Territories. From southwest to northeast, the Cordillera is divided into geological domaines as follows: the Southwest Yukon (1), the Coast Plutonic Complex (2), the Whitehorse Trough (3), the Yukon Crystalline Terrain (4), the Cassiar Platform (5) and (6), the Selwyn Basin (7) and Mackenzie Fold Belt (8).

The southern Yukon is sliced into three parts by the northwest trending strike-slip faults, the Tintina and Denali faults. Tectonic elements northeast of the Tintina Fault recurr southwest of it as represented by the Cassiar Platform, (5) and (6), and Yukon Cataclastic Terrain, (4) and (6). However, the Denali Fault separates discrete terrains or geologic domaines.

The geology of Cordilleran Province includes two distinct parts, the ancient North American continental platform lying northeast of the Tintina Fault and Teslin Suture and an accreted Mesozoic arc structure accreted by plate tectonics to that region southwest of the Tintina Fault and Teslin Suture.

The ancient North American platform strata, which formed on the ancient North American continent consist of thrust-faulted moderately folded Paleozoic sedimentary rocks that were deposited as platform sequences on the Mackenzie (8) and Cassiar Platforms (6). Subdivisions or geological domaines consist of the Mackenzie Fold Belt (8), Selwyn Basin (7) and Cassiar Platform (6). The shallow water facies of the Mackenzie and Cassiar platforms grade into deeper water facies in the Selwyn Basin, where Road River Formation pelitic sedimentary rocks host stratiform zinc-lead deposits. Paleozoic strata are underlain by Proterozoic clastic strata referred as the "Grit Unit" and in certain areas Upper Triassic and Cretaceous strata overlie Paleozoic strata.

The accreted Mesozoic arc system, southwest of the Tintina Fault and Teslin Suture consist mostly of Paleozoic and Mesozoic rocks, principally high-grade metamorphic and sheared sediments and volcanics, as well as granite and volcanic rocks. The accreted arc system contains large discordant batholiths of Triassic and Jurassic granitic rocks, and Cretaceous and younger volcanic rocks.

In the ancient North American platform, extensive Cretaceous plutons, principally small discordant plugs and stocks, intrude rocks of the Selwyn Basin and Mackenzie Platform. Large concordant batholiths intrude rocks of the Cassiar Platform.

The North Yukon (9) contains a variety of complex geological domaines which have not been separately identified in this report because of the paucity of mineral resource data within this domaine. The strata of this region range in age from Proterozoic to Tertiary and mid-Paleozoic grantitic plutons form batholiths and stocks in the region.

Cordilleran Province Mineral Deposits

The following section deals with the important known mineral deposits of Cordilleran Province. Mineral associations in the ancient North American platform include strataform zinc-lead-(silver) deposits, carbonate hosted zinc-lead-(silver) deposits, vein silver-lead-zinc deposits, and skarn tungsten deposits.

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*The number of the geological domaine is used to identify the geological domaine on the map accompanying this report (in pocket).

The mineral associations of the accreted Mesozoic arc system include porphyry copper-molybdenum deposits, vein gold-silver deposits, skarn copper deposits and nickel-copper and asbestos deposits associated with alpine-type ultramafic rocks.

North American Platform Associations
Strataform Zinc-Lead-(Silver) Deposits

Mineral exploration has established that the Selwyn Basin (7) is a major metallogenic province which contains one of the world's major concentrations of sediment-hosted stratiform sulphide zinc-lead-(silver) deposits. The deposits are generally hosted in Lower Cambrian to Middle-Upper Devonian rocks of shale or equivalent metamorphic rocks. The target host rocks are the pelitic sedimentary rocks of the Road River Formation and overlying Black Clastic Group.

Black Clastic and equivalent lithologies in the southern part of the Northern Yukon (9), north of the Dawson Thrust, have been reported by Findlay and Sangster (1982) as being a metallogenically significant unit based on geochemical information and correlation with the Black Clastics of the central and eastern Selwyn Basin.

The model of deposition for these deposits is based on evidence that the deposits are sedimentary exhalative deposits that were emplaced as hot metalliferous geothermal brines on the sea floor in active tectonic environments, particularly grabens, along deep seated fault systems. These sedimentary exhalative deposits occur along tectonically active cratonic margins and intracratonic sedimentary basins and are spatially related to synsedimentary fault lines.

The zinc-lead-silver deposits of the Selwyn Basin are identified with at least three metallogenic epochs. The Quartz Lake deposit is in the Proterozoic "Grit Unit"; the Anvil and Howards Pass deposits are in Lower Cambrian, and Lower Ordovician to Upper Silurian strata, respectively; and the Tom and Jason deposits are in the Middle to Upper Devonian Earn Group. Carne and Cathro (1982) have estimated that the resource potential of the Selwyn Basin, including economic and subeconomic resources, both discovered and undiscovered, is in the order of 900 million tonnes of mineralization grading 9 percent or greater combined zinc and lead. This estimate includes the resource potential of the Gataga camp in northern British Columbia.

Anvil Camp

The Anvil Camp near Faro, Yukon, contains eight zinc-lead-silver deposits that lie along an arcuate belt some 25 km long. The most important deposits are the Faro (currently being mined), Vangorda, DY, Grum and Swim. These deposits contain over 112 million tonnes of identified reserves and resources.

Howards Pass Camp

The Howards Pass camp on the Yukon-NWT border contains two main zinc-lead deposits, the XY and Anniv. These immense deposits are contained in the Howards Pass Formation, a facies of the Road River Formation. Resources are in excess of 480 million tonnes averaging 7 percent combined zinc and lead. Higher grade mineralization in the XY deposit includes diluted resources of about 9 million tonnes grading 10.6 percent zinc and 5.5 percent lead.

Macmillan Pass Camp

The Tom and Jason deposits near Macmillan Pass on the Yukon-NWT border are smaller but higher in grade than those of the Anvil and Howards Pass camps. They are associated with barren or weakly mineralized barite beds. The Tom and nearby Jason deposit together contain over 23 million tonnes with an average grade of about 13.7 percent combined zinc and lead. The Jason deposit is particularly rich in silver.

Other strataform zinc-lead-(silver) deposits include the Quartz Lake, Mel and Barb (Matt Berry) deposits.

Carbonate Hosted Zinc-Lead Deposits

Carbonate hosted zinc-lead deposits, in which epigenetic sulphides fill open spaces within the carbonate host rocks, are found within the Mackenzie Fold Belt (8) and eastern Selwyn Basin (7). At Goz Creek, numerous occurences extend over 8 km of strike length. The potential resources of the zones have been estimated at 11 million tonnes grading 8 percent zinc. Other carbonate hosted deposits in this region include the Bear-Twit, and Gayna River lead-zinc deposits. Goz Creek and Gayna River are Mississippi Valley-type deposits in carbonates of Hadrynian age.

Silver-Lead-Zinc Vein Deposits

Silver-zinc-lead bearing veins occur throughout the Yukon in a variety of geological environments. However they are concentrated for the most part in the ancient North American platform, particularly in the Cassiar Platform and Selwyn Basin. The deposits range from veins to fracture fillings in breccia zones and are probably of late Cretaceous or Tertiary age.

The Keno Hill-Galena Hill vein system, currently being mined by United Keno Hill Mines Ltd is the most famous region of silver-lead-zinc veins. Production from numerous workings since 1919 has amounted to 5 600 tonnes of silver, 252 954 tonnes of lead and 137 772 tonnes of zinc

In the Nadaleen Range, the Val, Vera and Craig properties contain vein deposits. The most encouraging silver properties in the Pelly Mountains (Cassiar Platform) are the Tintina and Ketza.

Tungsten, Tin, Silver-Lead-Zinc and Copper Skarn Deposits

Tungsten and tin deposits are spatially and genetically associated with Cretaceous granite and quartz monzonite stocks intruded into the ancient North American margin; particularly the Selwyn Basin and Cassiar Platform. At Mount Hundere in the Cassiar Platform silver-lead-zinc skarn mineralization is associated with the Cretaceous Seagull quartz monzonite batholith. The Whitehorse Copper Belt skarn deposits are associated with Cretaceous granodiorite.

The Selwyn Basin contains the western world's largest reserves of tungsten. These reserves are concentrated in the Cantung and Mactung deposits, both located near the Yukon-NWT border. These skarn deposits are hosted by Lower Cambrian carbonate strata, which have been metamorphosed by mid-Cretaceous granitic plutons. These plutons intruded along a northwesterly zone of weakness or hinge zone that existed since Cambrian times between the eastern edge of the Selwyn Basin and the Mackenzie platform carbonates. This structurally weak and tectonically disturbed hinge zone has been the locus for many types of mineral deposits including tungsten and zinc-lead deposits.

The Mactung deposit contains 37 million tonnes grading 0.95 percent WO_3. This deposit is expected to be developed for production by the late 1980's. The Cantung E Zone deposit, currently a producer has reserves of 2.76 million tonnes of 1.32 percent WO_3. Originally, reserves in the E Zone orebody in 1974 amounted to 3.8 million tonnes of 1.68 percent WO_3. The Lened deposit in the same belt contains one million tonnes averaging 1.0 percent WO_3. West of Ross River, in the Cassiar Platform, the Cab-Risby tungsten skarn deposit contains 2.7 million tonnes of 0.81 percent WO_3.

In the Mayo-McQuestin area, tungsten skarn units are associated with Late Cretaceous granitic plutons. The most important prospect, the Dublin Gulch (Ray Gulch) property, contains 5.4 million tonnes of 0.81 percent WO_3. Tin also occurs in association with the Cretaceous intrusives in the Dublin Gulch and McQuesten areas.

Low-grade tin mineralization occurs in skarns associated with the Seagull Batholith in the southern Yukon, Cassiar Platform domaine

At Mt. Hundere on the Cassiar Platform north of Watson Lake, the Hundere skarn deposit contains about 630 000 tonnes averaging 133 g per tonne silver, 10.1 percent lead and 11.2 percent zinc.

The Whitehorse Copper Belt copper-iron skarn deposits are developed in a 32 km-long belt of Triassic Lewes Group dolomite and limestone along the western contact of a Cretaceous granodiorite batholith, on the west side of the Whitehorse Trough. Some 16 deposits have been identified and several have been mined. From 1906 to 1982 the Whitehorse Copper Belt produced 10.3 million tonnes of ore at an average grade of 1.4 per cent copper containing 126 659 tonnes of copper metal. This production was predominantly from Whitehorse Copper Mine's Little Chief, Arctic Chief, War Eagle, Black Cub and Keewenaw deposits. Whitehorse Copper Mines, from 1967 to 1982, produced 121 000 tonnes of copper, 86 tonnes of silver and 9.8 tonnes of gold, all contained in concentrate.

Porphyry Molybdenum and Tungsten Deposits

In the Cassiar Platform, the Logtung tungsten-molybdenum deposit occurs as a porphyry deposit in one of the Cretaceous Seagull Batholith quartz monzonite stocks. The deposit contains 163 million tonnes averaging 0.12 percent WO_3 and 0.052 percent MoS_2.

At Red Mountain, within the Cassiar Platform, the Red Mountain porphyry molybdenum deposit contains reserves of 72 million tonnes grading 0.22 percent MoS_2, including 22 million tonnes grading 0.31 percent MoS_2. The quartz monzonite host rock is an outlying stock of the Cretaceous Quiet Lake Batholith. The Red Mountain deposit is genetically comparable to the Logtung deposit.

Sedimentary Copper Deposits

One of the few Canadian examples of sedimentary syngenetic copper deposits is the Coates Lake deposit, in the Redstone Copper Belt, within the Mackenzie Fold Belt. The Redstone Copper Belt is a 300 km-long arcuate zone of Late Proterozoic stratabound copper occurences. The Coates Lake deposit is of the Kupferschiefer or red-bed type. The deposit contains 37 million tonnes of drill indicated resources grading 3.9 percent copper and 11.3 g per tonne silver, within one mineralized bed approximately 1 meter thick. The host mudstone and carbonate rocks are of probable Helikian age.

Volcanogenic Polymetallic Base Metal Deposits

Only a few deposits in the Northern Cordillera have been tentatively identified as volcanogenic polymetallic base metal deposits. These deposits are associated with volcanic rocks and are polymetallic. They include the Hart River and Clear Lake deposits. The Hart River deposit has a reported 0.5 million tonnes grading 1.45 percent copper, 3.65 percent zinc, 0.87 percent lead, about 50 g per tonne silver and 1.4 g per tonne gold. It occurs within a Proterozoic carbonate-clastic volcanic sequence.

Barite

Barite deposits are found in the Selwyn Basin (7) and the North Yukon domaines (9). The Moose, Tea and Cathy barite deposits, and barite associated with the Tom and Jason zinc-lead-(silver) deposits, are all located in the Macmillan Pass area. The Tea deposit was mined during a short period in 1982. In the North Yukon, the Karen and Rein are the most important barite deposits.

Iron

Iron formations and ironstone are distributed in the ancient North American platform, particularly in the Mackenzie Fold Belt and North Yukon domaines. Representative of these deposits are the Proterozoic Rapitan Group iron formations in the Mackenzie Mountains. The most important in terms of size is the Crest (Snake River or Iron Creek) deposit on the Yukon-NWT border. It contains 5.4 billion tonnes averaging 46 percent iron and about 0.3 percent P_2O_3, mineable by open pit methods. The area is thought to contain resources of 23 billion tonnes of iron formation.

Magnetite - bearing iron formation occurs in Precambrian rocks near Shell Creek; northeast of Dawson. The Shell Creek deposit contains about 45 million tonnes averaging 25 percent iron.

In the northwest Yukon, the Rusty Springs oolitic magnetite deposit is associated with sediments of Permian to Jurrassic age. The Rusty Springs deposit contains about 45 million tonnes grading 55 percent iron.

In the northeast Yukon, Cretaceous phosphate-bearing siderite beds are found in the northern Richardson Mountains. At Mount Davies-Gilbert, the Delta-Dawn iron deposit contains billions of tonnes of iron resources.

Accreted Mesozoic Arc Associations

Porphyry Copper and Copper-Molybdenum Deposits

Porphyry copper and copper-molybdenum deposits in the accreted Mesozoic arc are associated with Triassic and late Cretaceous to Tertiary granitic intrusions.

The Casino and Cash porphyry copper-molybdenum deposits in the Yukon Crystalline Terraine (4) occur within subvolcanic parts of the mid Cretaceous to Paleocene Mount Nansen Group. Other deposits are the Mt. Cockfield and Yukon Revenue properties. Both the Casino and Cash deposits are of relatively low grade copper deposits.

Minto-type deposits are prophyry deposits found within foliated Triassic granodiorite, in a 40 km-long belt, northeast of Carmacks. These include the Minto, STU and Williams Creek deposits, which occur in foliated gneisses within the Yukon Crystalline Terrain (4). Reserves at the Minto and contiguous DEF property are 6.57 million tonnes grading 1.86 percent copper. At Williams Creek reserves amount to 14.5 million tonnes grading 1.0 percent copper.

Vein Gold-Silver Deposits

Vein gold-silver deposits in Yukon occur for the most part in the accreted Mesozoic arc. Many veins in the Yukon that contain gold and silver are in Upper Cretaceous and Lower Tertiary volcanic and subvolcanic rocks. Gold-bearing veins have been found in the Montana Mountain area of the Whitehorse Trough domaine (3) on the Venus and Arctic Caribou properties. Gold lodes also occur in the Mount Nansen-Mount Freegold areas west of Carmacks on the Laforma and the Brown-McDade properties. Drill indicated resources of 133 300 tonnes grading 15 g per tonne gold are indicated on the Laforma property.

The Lone Star property contains the best known lode occurrence in the Klondike area.

Silver Vein Deposits

In the Yukon Cataclastic Complex (4) of the southwest Yukon, silver-lead-zinc veins occur in granodiorite and gneissic granodiorite of probable Cretaceous age on the Bomber, Helicopter and Mosquito properties.

Nickel-Copper Deposits

Two known nickel-copper deposits in the southwest Yukon, the Canalask and Wellgreen, are in serpentinized ultramatic sheets. Only the Wellgreen has produced a significant quantity of nickel and copper.

Asbestos

The Clinton Creek asbestos deposit, northwest of Dawson was mined during 1967-1978. It produced nearly one million tonnes of fibre. The deposit is associated with serpentinized alpine-type ultramafic body. Other asbestos properties include the Rex and Caley deposits.

Placer Gold

Placer gold mining in Yukon is distributed in areas both northeast and southwest of the Tintina Fault, which separates the ancient North American platform from the accreted Mesozoic arc system.

Yukon placer gold mining has produced about 370 million grams of gold since mining commenced in the early 1870's. Currently more than 200 placer mining operations are active. Production is principally from the Klondike, Mayo-Dublin Gulch, Kluane and Livingston Creek areas. The bulk of production has come from the Klondike where the deposits were not glaciated by the Pleistocene Cordilleran ice sheet.

Gravels in the Klondike goldfields consist of recent valley and creek gravels and older terrace gravels of which the high level White Channel gravels are well known. The placer deposits were probably produced during a period of deep weathering, and erosion in early Tertiary time. In late Tertiary time the area was uplifted and incised to form the present V-shaped valleys.

Coal

Coal deposits are widespread in Yukon. Coal is found in Mississippian, Triassic, Cretaceous and Tertiary non-marine rock sequences. Small Paleocene and Eocene coal deposits occur in the Tintina Trench near Dawson (Sourdough, Gates Creek, Coal Creek, and Cliff Creek mines), near Ross River (Lapie River deposit) and near Watson Lake. The deposits range from lignite to sub-bituminous and high-volatite bituminous rank.

In the Whitehorse Trough (5) bituminous coal occurs in the Triassic - Cretaceous Tantalus Formation. Near Carmacks, coal has been mined since the beginning of the 1900's at the Tantalus, Tantalus Butte and Five Fingers mines. In recent years the Tantalus Butte mine has produced thermal coal for drying of zinc and lead concentrates at Cyprus Anvil's Faro Mine. Another deposit in the Whitehorse Trough is the Nordenskiold.

The largest coal field in the Cordilleran Province occurs in the Bonnet Plume Basin of the North Yukon. Five seams within Late Cretaceous and Early Tertiary beds contain 654 million tonnes of measured, indicated and inferred coal resources. The Illtyd Creek underground deposit contains 121 million tonnes of high volatile C bituminous coal suitable for thermal power generation. The Bonnet Plume deposit at the northern end of the basin contains an estimated 1.4 million tonnes of lignite.

In the North Yukon (9) on the southwest flank of the Mackenzie Delta a 2.5 meter coal seam, in the Lower Tertiary Reindeer Formation, has been mined at Coal Mine Lake (Moose Channel Mine).

INTERIOR PLATFORM AND ARCTIC PLATFORM

The Interior Platform (10) is underlain by nearly horizontal Phanerozoic sedimentary rocks, covered extensively by a veneer of Lower Cretaceous rocks.

The Arctic Platform (10) forms the arctic lowlands and includes the terrains where the Precambrian basement is overlain by flat-lying or little disturbed strata, for the most part carbonates of Cambrian to Late Devonian age. In the Arctic Archipelago these strata extend to Victoria, Devon, Ellesmere and Baffin islands and the Foxe Basin area. In the western part of the Platform, on Banks Island, Cretaceous sediments form the surface.

Mineral Deposits of the Interior Platform and Arctic Platform

The only economic mineral deposits of the Interior Platform (10) and Arctic Platform (10) at present are stratabound Mississippi Valley-type lead-zinc-(silver) deposits, which developed in solution caverns in karsted carbonate rocks. Other resources include coal deposits and diamond occurrences.

Mississippi Valley-Type Zinc-Lead Deposits

The Great Slave Plain on the western edge of the Precambrian Shield of the Northwest Territories is part of the Interior Platform (10) and is underlain mainly by Paleozoic carbonates. It extends to the famous Pine Point zinc-lead district, which contains some 50 Mississippi Valley-type zinc-lead deposits ranging in size from 0.25 million to over 15 million tonnes. Most of the deposits are within the property of Pine Point Mines Ltd., where published reserves amount to 37.5 million tonnes grading 7.3 percent combined zinc and lead. The deposits occur in the hinge zone, a zone containing the Devonian

Presqu'ile facies of the Pine Point dolomite barrier reef complex. The deposits occur as tabular ore zones following karst horizons and as prismatic ore zones in karst chimneys. On the western quadrant of the Pine Point District, Westmin Resources Ltd. has identified the X-25 and R-190 deposits in the same Presqu'ile Formation.

The Arctic Platform (10) is underlain mainly by Lower Paleozoic carbonates similar to those forming the Interior Platform. The principal identified mineral resource of the Arctic Platform is coal. However, the Arctic Platform has a reasonably good potential for Mississippi Valley-type zinc-lead deposits.

The Polaris zinc-lead mine on Little Cornwallis Island is the third Mississippi Valley-type zinc-lead mine in the Northwest Territories. It is the largest of 14 deposits and showings in the Cornwallis Lead-Zinc District. Because the deposit occurs in the north-trending Cornwallis Fold Belt, which divides the Arctic Platform from the Franklin Geosyncline, it is described under deposits of the Innuitian Province in this report.

Coal

The Interior Platform and Arctic Platform (10) contain Late Cretaceous and Tertiary sediments which are coal bearing. Noteable among the coal prospects is the Brackett Basin coal field near Fort Norman on the Mackenzie River. The coal field occurs in Tertiary sediments and contains estimated resources of two billion tonnes of lignite to sub-bituminous rank coal.

The Coal Mine Lake deposit, northwest of Aklavik, contains four seams in Lower Cretaceous sedimentary rocks. The seams were mined during 1944-1950.

On the Arctic Platform, near Paulatuk, lignite has been mined for local use. Coal has also been mined for local use near Pond Inlet, northern Baffin Island.

Diamonds

On the Arctic Platform, at Somerset Island, some nineteen kimberite pipes and dikes were located by Diapros Canada Ltd. and Cominco Ltd. during 1973-1975. A few small diamonds were recovered from heavy mineral concentrates taken from bulk rock samples. The diamondiferous pipes are the Batty, Nord and Peuyuk. The pipes intrude flat lying formations of Upper Ordovician to Lower Devonian age and are presumed to be of Mesozoic age. The emplacement of Somerset Island kimberlites appears to be controlled by continental rifting associated with opening of the North Atlantic during Cretaceous time. This rifting resulted in the formation of the Lancaster Sound Graben and Prince Regent Inlet Graben.

SLAVE STRUCTURAL PROVINCE

The oldest structural province in the North is Slave Province (23) consisting of Archean age rocks. The province extends north from Great Slave Lake to the Coronation Gulf on the Arctic Coast and is bordered to the northeast and southwest by the Bear Province (11 to 17, 20, 24, 35, 36) and to the east by the Churchill province (25 to 34, 37). Slave Province is a metallogenic province in which Archean volcanogenic base metal deposits and both syngenetic and epigenetic gold deposits predominate. It is a region of high potential for further discovery of such mineral deposits.

Slightly more than one-half of the Slave Province consists of supracrustal rocks of which the Yellowknife Supergroup is typical. These rocks form some 19 metavolcanic belts, most of which are marginal to more extensive sedimentary basins. The volcanic-sedimentary belts are wrapped around basement gneissic rocks and are flanked, separated, or intruded by plutonic rocks. Because the volcanic rocks are characterized by single cycles of volcanism, there is generally only one stratigraphic level in the volcanic piles at which volcanogenic base metal deposits accumulate (Padgham, 1973). These deposits are genetically related to acidic volcanics. Slave Province is similar to other Archean provinces such as Superior Province of northern Ontario and Quebec, in that it hosts important polymetallic volcanogenic base metal deposits and both syngenetic and epigenetic gold deposits.

Volcanogenic Polymetallic Base Metal Deposits

A number of important polymetallic base metal deposits have been discovered in the Archean metavolcanic rocks of Slave Province (23). Among the noteable base metal deposits are the Izok Lake, High Lake, Hackett River, Hood River, Gondor, Yava and Musk deposits. Over 40 million tonnes of rich polymetallic sulphide mineralization has been identified within the volcanic belts. The Izok Lake and Hackett River (Bathurst Norsemines) deposits are the most important, being in the statistical upper quartile tonnage group for deposits of this type (Boldy, 1977). Analogy with similar ore districts in Superior Province of Ontario and Quebec suggests that more deposits of the size range and grade already discovered will be identified with continued exploration effort. However, development of such deposits is currently hampered by excessive costs related to transportation of bulk concentrates to markets.

Volcanogenic strataform massive sulphide deposits are important world resources of copper, zinc, lead, silver and gold. They show a tendency to occur in clusters related to centres of volcanic activity. Most of the deposits in a region will be confined to one or two volcano-stratigraphic intervals and will show a strong correlation with intermediate to felsic explosive phases of volcanic activity. In Slave Province most of the host rocks are of felsic character and are either within or in close proximity to pyroclastic rocks.

The Izok Lake deposit is the richest known deposit of this type in Canada. Before the Izok Lake deposit was discovered in 1974, two similar deposits, the Hood River #10 and #41, had been discovered 45 km to the north of Izok Lake, near Amoogabooga Lake. Recently the Gondor deposit has been found in the area.

In the Hackett River area, south of Bathurst Inlet, a group of deposits known as the Hackett River deposits have been explored by Cominco Ltd. and Bathurst Norsemines Ltd. since 1970. These include the A, Cleaver and Boot Lake zones. Collectively the deposits contain 19.5 million tonnes of polymetallic suphides. Some of the deposits contain exceptionally high-grade silver.

Other deposits in the southern part of the Hackett River Volcanic Belt are the Yava and Musk. Both contain zinc, lead, copper and silver, with the content of silver being high.

Other silver-rich volcanogenic base metal deposits in Slave Province are the High Lake deposit near Coronation Gulf and the Indian Mountain Lake deposit north of the East Arm of Great Slave Lake.

Gold Deposits

In Slave Province gold is associated with Archean supergroup volcanic and associated sedimentary rocks. The most important productive gold deposits until recent years are the epigenetic quartz-carbonate bodies in greenstone shear zones at Yellowknife. These mines include the deposits of the Giant Yellowknife and Con mines. A number of former producers, developed in mostly high grade but erractically mineralized gold-quartz veins, operated during short periods in the region east and north of Yellowknife. These mines include the Thompson-Lundmark, Ruth, Camlaren, DAF, Discovery, June, Norma, Nose and others.

Of great significance in recent years is the recognition of stratiform volcanic exhalative or syngenetic gold deposits within the Slave Province. The Lupin deposit is one of these type. Because of recognition of the economic potential of syngenetic gold deposits, and higher gold prices, gold exploration activity has accelerated in recent years.

The Lupin Mine deposit is a gold-bearing amphibolite deposit. The amphibolite host rock was developed by metamorphism of a silicate-sulphide facies iron formation. The Mos (Mosher Lake) deposit, northwest of Yellowknife is similar to the Lupin deposit, as the gold is very fine grained and occurs an intimate association with arsenopyrite in an amphibolite unit.

Silver

In the Hope Bay-Elu Inlet Archean volcanic belt (21) native silver was produced during 1974 and 1975 from the Hope Bay Mine. The main vein is in Yellowknife Supergroup volcanic rocks near its contact with granitic rocks.

Lithium and Rare Earth Elements

The Thor rare earth deposit, southeast of Yellowknife, occurs in the Blatchford Lake alkaline intrusive complex. The S and T Zones contain uranium, thorium, columbium, tantalum and beryllium. Resources are estimated at 63 million tonnes grading 0.03 percent Ta_2O_5 and 0.4 percent Cb_2O_5. A second columbium-tantalum deposit, the VO, is located northeast of Yellowknife.

The region east of Yellowknife is well known for its lithium, beryllium, tin and columbium-tantalum-bearing pegmatites.

BEAR STRUCTURAL PROVINCE

The Bear Province is composed of Proterozoic rocks of Aphebian to Hadrynian age. Predominantly, Aphebian sedimentary sequences which form the Bear Province flank the Slave Province. These are found to the northeast of the Slave Province in the intracratonic Kilohigok Basin (20), to the southeast of the Slave Province in the Athapuscow Aulacogen (24), and to the west of the Slave Province in the Wopmay Orogen (11 to 17). Outliers of Bear Province rocks are found in the Wellington Arch (35) and Minto Arch (36) on Victoria Island and the Brock Inlier on the NWT mainland (22).

South of Coronation Gulf, north-dipping Neohelikian sediments (13 to 15) overlie Paleohelikian sediments of the Hornby Bay Group (12). Late Proterozoic rocks at the mouth of Bathurst Inlet include basalts and sediments of the Coppermine River Group (14).

The Wopmay Orogen includes strongly metamorphosed and partly granitized rocks in the eugeosynclinal western portion of the orogen. This part of the orogen includes the Great Bear Batholith and remanent supracrustal volcanic rocks.

The metallogenic associations in the Bear Province include silver, uranium, copper and other metals. The Camsell River and Echo Bay vein silver districts, east of Great Bear Lake, occur in the late Aphebian volcanics and volcano-clastic rocks (11) which are comagmatic with the Great Bear Batholith. Copper and uranium occurrences are widespread. During the late 1960's the basalts of the Coppermine River Group (14) were extensively explored for copper mineralization. Hundreds of small uranium (pitchblende) deposits occur mainly in veins over a large part of Bear Province (17). In both the Kilohigok Basin (19, 20) and Athapuscow Aulacogen (24) the main metallogenic associations with the Proterozoic sedimentary and volcanic rocks are uranium and copper.

Silver Deposits

The Great Bear region contains important silver-cobalt-nickel-arsenide-bismuth-uranium-copper deposits in quartz-carbonate veins. These fill fractures and shears in Aphebian volcanic rocks of the Labine Group. In the Camsell River district, Terra Mines Ltd. has produced silver from the Silver Bear, Norex and Smallwood mines since 1969. To the end of 1982 the area produced 395 tonnes of silver.

At Port Radium, Eldorado Gold Mines established its Eldorado Mine in 1931 to produce radium and by-product uranium. Following an initial closure in 1940 the mine reopened in 1942 as a uranium producer. Following a second closure in 1960, it was operated between 1976 and 1981 as a silver mine by Echo Bay Mines Ltd. The Echo Bay, Contact Lake and Edgar No. 1 mines, in the

Port Radium area also produced silver until the reserves were exhaused in 1981. The area produced approximately 1 134 tonnes of silver.

Uranium Deposits

Uranium was produced at the Eldorado and Contact Lake mines near Port Radium as well as from the Rayrock Mine, located in the southern part of the Great Bear region. The latter produced 207 tonnes of U_3O_8 during 1957-1959. In the Great Bear (17) region, numerous occurrences of small high grade uranium have been found associated with silver, copper, cobalt and nickel as veins in fractures.

The Helikian Hornby (12) and Dismal Lake (13) groups located north of Great Bear Lake include continental sandstones and associated conglomerate beds which are favourable for sandstone-type uranium deposits.

In the Athapuscow Aulacogen (24) the base of the late Aphebian Et-Then Group, a continental red-bed sequence, is considered to be a good target for unconformity-related uranium deposits.

In the Kilohigok Basin (19, 20), uranium-copper veins have been found in Aphebian Brown Sound Formation within basalt flows interlayered with red clastic sediments on the Pomie claims. The base of the Helikian Ellice River Formation sandstone is considered to be a good target for unconformity-related uranium deposits. This formation is correlative with the Thelon Formation in the Keewatin District.

Copper Deposits

Native copper occurs in the basalt sequence of the Coppermine River Group (14) in the Coppermine River and Bathurst Inlet areas. The largest deposits are the June and DOT 47 (Wreck Lake) deposits. The latter has resources of 3.72 million tonnes grading 3 percent copper.

Base and Platinum Group Metals

Low grade nickel-copper sulphides with associated platinum and palladium values occur along the eastern and western contacts of the layered mafic and ultramatic rocks of the Muskox Intrusion (18). These have not shown any economic potential but platinum group metal concentrations may be more clearly identified with further exploration.

CHURCHILL STRUCTURAL PROVINCE

Churchill Structural Province (25 to 34, 37) extends over the eastern half of the mainland Northwest Territories, the southern half of the Boothia Arch, the greater part of Baffin Island and southeastern parts of Ellesmere and Devon Islands. The Province is underlain by Archean and Aphebian volcanic, sedimentary and plutonic rocks deformed and metamorphosed during the Proterozoic Hudsonian Orogeny. Extensive areas consist of granitic gneisses and migmatites. In certain regions such as the Kognak-Tavani greenstone belt (29), volcanic and associated sedimentary basement complex rocks are infolded, about northeasterly axes and are intruded by granitic plutons. Belts of Archean-type volcanics have also been mapped on Melville Peninsula and on Baffin Island.

Supracratonic Lower Aphebian metasediments in Churchill Province locally unconformably overlie the metamorphic complex and form infolded basins (27, 32). These rocks include the Amer, Montgomery Lake and Hurwitz groups in the Keewatin District. In the southern Melville Peninsula and central Baffin Island the Foxe Fold Belt (38) forms a 100 to 200 km-wide late Aphebian belt of deformed metamorphic rocks.

During the Hudsonian orogeny, Churchill Province underwent a stage of intracratonic rifting, with the deposition of continental sediments and volcanic rocks and related intrusive groups. These late Aphebian and Helikian rocks termed the Dubawnt Group (26, 28, 29), form shallow-dipping to flat lying strata within the Thelon (26) and Baker Lake basins (29) of central Keewatin District.

In Northern Baffin Island, late Proterozoic (Neohelikian) strata (44) unconformably overlie an Archean-Aphebian gneiss complex (30). These formations belong to the Bylot Supergroup and are exposed on the Borden Peninsula and Bylot Island. In the Fury and Hecla Basin (46) Neohelikian sedimentary strata are deposited in a depositional basin similar to that of the Bylot Supergroup. Most of these basins were initiated or evolved as grabens.

The metallogenic associations of Churchill Province include polymetallic volcanogenic sulphide deposits, lode gold deposits, uranium deposits, zinc-lead-silver deposits and iron deposits.

Uranium Deposits

Central Keewatin district is an important uranium metallogenic province. All of the important uranium deposits and showings are in the Amer, Dubawnt, Yathkyed and Baker Lake areas, which contain the Thelon Basin (26), the Baker Lake Basin (28) and Yathkyed Basin (28) and several subsidiary basins of Middle Proterozoic rocks. In the west quadrant of Churchill Province, south of Great Slave Lake, the Nonacho Basin (25) is formed at Middle Aphebian Nonacho Group sediments. These Proterozoic basins are similar to the uranium rich Athabaska Basin of northern Saskatchewan. Exploration has been actively conducted in these geologic domaines since the early 1970's.

Exploration in the central Keewatin district for uranium has been directed to the basement complex metasedimentary and metavolcanic gneisses, to Aphebian sediments of the Hurwitz and Amer groups and in Late Aphebian to Early Helikian Dubawnt Group sediments and volcanics. The regolith underlying the Helikian Thelon Formation of the Dubawnt Group is a target for unconformity - related uranium deposits of the Athabaskan Basin type.

The largest and most significant uranium discovery in the Churchill Province is the Lone Gull deposit, west of Baker Lake. It is situated close to the northeast rim of the Helikian Thelon Basin (26) near the Aphebian Hurwitz Group-Helikian Thelon Group sedimentary unconformity (26,27). The deposit is an unconformity-type deposit, with the locus of ore deposition being near east-northeast trending faults. Visible forms of alteration are hematization, chloritization and illitization. In most aspects the deposit is typical of those of the Athabaska Basin. A minimum of 37 million pounds of U_3O_8 at an average grade of 0.4 percent has been identified in three zones.

At Amer Lake, north of Baker Lake, uranium showings are low grade, laterally continuous stratabound, and locally remobilized in fracture zones in the Amer Group (27) metasediments. The mineralization is strikingly similar to the Jabuluka, Ranger and Koongarra deposits in Australia.

The uranium deposits in the Baker Lake Basin occur in a number of mineralization styles. Exploration drilling in the late 1960's by Pan Ocean Oil Ltd. (now Aberford Resources Ltd.) on properties in the Christopher Island area (prospect 68-1), and southwestward to Kazan Falls (prospect 68-4), have indicated subeconomic concentrations of uranium with associated base metals. Prospect 68-2 contains a maximum of 1 360 tonnes of U_3O_8, while prospect 68-4 contains 455 tonnes of U_3O_8, in ore averaging 0.46 percent U_3O_8. The geological setting of the latter prospect is fracture controlled and the prospect is similar to the Beaverlodge (Uranium City) deposits in northern Saskatchewan.

About two-thirds of the Thelon Basin (26) has been set aside from mineral development as a game sanctuary. Several areas within the sanctuary exhibit a combination of geological parameters that suggests a very high potential for uranium mineralization.

Mississippi Valley-Type Zinc-Lead Deposits

The Nanisivik zinc-lead-silver mine deposit at Strathcona Sound, northern Baffin Island, occurs in the Helikian Society Cliffs dolomite, within the North Baffin graben. This 25 km-wide graben extends northwesterly across the Borden Peninsula. When the Nanisivik mine began production in 1977, reserves amounted to 6.3 million tonnes, grading 14.1 percent zinc; 1.4 percent lead and 62 g per tonne of silver. The sulphide body is flat-lying, trends east to west for 3000 m, and has a sinuous shape similar to a gentle river meander.

Kognak-Tavani Greenstone Belt

The Kognak-Tavani volcanic belt (29) is also referred to as the Ennadai Lake-Rankin Volcanic Belt. The belt consists of Archean volcanic and sedimentary rocks similar to those of the Slave Province. The belt contains volcanogenic base metal deposits and both syngenetic and epigenetic gold deposits.

Gold Deposits

The Cullaton Lake Mine B Zone gold deposit west of Eskimo Point on Hudson Bay consists of a mineralized unit of quartz-magnetite-iron formation. This type of deposit is similar to the Lupin deposit in the Slave Province and the Homestake mine in South Dakota, United States. The A Zone deposit in the same area is probably of similar type and is of lower grade. The B Zone deposit contains 280 000 tonnes grading 25.4 g per tonne.

The Shear Lake gold deposit, 5 km southeast of the B Zone deposit is currently being developed for production. The deposit has a reserve potential of 220 000 tonnes grading 10.6 g per tonne gold and is located in Proterozoic Hurwitz Group quartzite (32).

The presence of a number of small gold occurences in the Kognak-Tavani greenstone belt indicates a high potential for economic gold deposits.

Volcanogenic Polymetallic Base Metal Deposits

The most important volcanogenic base metals deposit in the Churchill Province is the Heninga Lake (Gemex) deposit in the Kognak-Tavani volcanic belt. The deposit consists of four zones of massive sulphides in intermediate tuff. The total size of the deposit is 5.44 million tonnes grading 9.0 percent zinc, 1.3 percent copper and 68.6 g per tonne silver.

Nickel-Copper Deposits

Nickel-copper deposits occur at Rankin Inlet and at Ferguson Lake, west of Rankin Inlet. The former deposit was mined as a small high-grade operation from 1957-1962. The Rankin Inlet mine produced about 360 000 tonnes of ore at a grade of about 2.6 percent nickel and 0.7 percent copper. The deposit occurs in a differentiated peridotite sill. The Ferguson Lake copper-nickel sulphide deposit is associated with two zones in a hornblendite. The deposit contains 7.3 million tonnes of 0.9 percent copper and 0.8 percent nickel.

Iron Deposits

Iron deposits in the Churchill Province occur in Archean and Aphebian strata on the Melville Peninsula, Baffin Island, the Belcher Islands and Nastapoka Islands.

Iron formations in northern Baffin Island (30) and the Melville Peninsula (37) are associated with volcanic and sedimentary rocks. The Mary River magnetite-hematite iron deposits in northern Baffin Island are the most important. These occur in three zones in the Mary River Group and contain about 350 million tonnes of drill-indicated iron resources, ranging in grade from 66 to 68 percent iron, with less than 2 percent silica. In addition, substantial amounts of lower grade iron formation are present.

At Eqe Bay, northwestern Baffin Island, about 360 million tonnes of iron formation grading 32-45 percent iron occurs in four deposits. The iron formation is magnetic and is apparently within rocks of the Mary River Group.

Iron formations are extensivly exposed in the Prince Albert Group on the Melville Peninsula (37). Resources in the Borealis East deposit have been estimated at 1.1 billion tonnes grading 23 to 34 percent iron; in the Borealis West deposit resources are estimated at 3.2 billion tonnes grading 32 to 38 percent iron.

At Chorkbak Inlet and Maltby Lake on the Foxe Peninsula, southern Baffin Island, magnetite iron formations are associated with gneissic rocks. The Chorkbak Inlet resources amount to 350 million tonnes grading about 20 percent iron; the Maltby Lake resources amount to 200 million tonnes grading 34 percent iron.

In Hudson Bay, Lake Superior-type iron formation is distributed throughout the Belcher Islands (51). The most favourable concentration is located on Innetalling Island in cherty magnetite iron formation. Resources have been estimated at 816 million tonnes grading 32 percent iron.

Lake Superior-type iron formation also occurs throughout the Nastapoka Islands (51) as cherty magnetite and hematite. Resources have been estimated at 400 million tonnes grading 30 percent iron.

In the southern District of Keewatin, west of Eskimo Point, the Ice deposit contains an estimated 360 million t of 40 percent iron.

INNUITIAN STRUCTURAL PROVINCE

The Innuitian Province (39 to 42) in the Arctic Archipelago is the least explored region in the North. While late Proterozoic rocks are exposed in parts of the Franklinian Miogeosyncline and some metamorphic rocks are exposed in northern Ellesmere and Axel Heiberg Islands, the Innuitian Fold Belt has not been sufficiently eroded to reveal extensive areas of igneous rocks. Therefore, deposits related to volcanism and magmatic activity are rare and generally absent. On the other hand, the extensive range and variety of thick sedimentary successions provides some possibility for stratabound deposits such as Mississippi Valley-type zinc-lead deposits and coal deposits.

Mississippi Valley-Type Zinc-Lead Deposits

The Cornwallis Lead-Zinc District extends over Cornwallis Island, southern Grinnel Peninsula and Little Cornwallis Island. The district contains at least fourteen Mississippi Valley-type zinc-lead deposits in carbonate rocks. Two of the deposits, the Eclipse and Polaris have reported reserves. Most of the deposits are found in carbonates of the Ordovician Thumb Mountain Formation and all appear to be associated with karsting and brecciation resulting from uplifting within the Cornwallis Fold Belt (39).

The Polaris Mine on Little Cornwallis Island contains almost twice as much contained lead and zinc metal as the recently published ore reserves of the Pine Point District. Current reserves at Polaris amount to 21.9 million tonnes grading 17.4 percent combined lead and zinc. The nearby Eclipse deposit contains 1.4 million tonnes grading 14.6 percent combined lead and zinc. The potential of the Cornwallis Lead-Zinc District remains high for discovery of economic deposits.

Some zinc-lead exploration was conducted in areas of Thumb Mountain Formation on Ellesmere Island (40). Lead-zinc mineralization has been found in the Copes Bay Formation on Judge Daly Promontory (40), northeast Ellesmere Island.

Coal

In Innuitian Province, coal is found in the Sverdrup Basin (42) in the Heiberg, Isachsen and Eureka Sound formations ranging from late Triassic to Tertiary age. The major coal resources occur in the late Cretaceous and Tertiary Eureka Sound Formation on Axel Heiberg Island and the Fosheim Peninsula, Ellesmere Island. In this region the formation contains numerous seams of coal ranging from lignite through sub-bituminous to high-volatile bituminous rank. Inferred resources in the Slidre Fiord area have been estimated at 21 billion tonnes of coal in place of which 2 billion tonnes may be potentially mineable by open pit methods in the Fosheim Peninsula (Bustin, 1980). Other coal deposits on Ellesmere Island occur at Bay Fiord and Vendom Fiord. On Axel Heiberg Island, coal deposits occur on the Kanguk Peninsula and at Buchanan Lake. Coal seams are also present on Stor Island in Eureka Sound. ' Coal resources of the eastern Axel Heiberg area are estimated to be in the order of 9 billion tonnes. These areas of coal resources encompass only a small portion of the known areas of Tertiary coal measures in the Arctic Archipelago, so that considerable additional coal resources may be present. None of the resources are considered to be currently economic for commercial development.

The largest coal seam in northern Ellesmere Island occurs in Cenozoic rocks at Watercourse Valley.

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CHAPTER 2

INVENTORY OF MINE RESERVES AND IMPORTANT MINERAL DEPOSITS IN THE YUKON AND NORTHWEST TERRITORIES

INTRODUCTION

Chapter 2 of this report is an inventory of mine reserves and important mineral deposits in the Yukon Territory and Northwest Territories. It includes deposits of metallic and non-metallic minerals which are of some significance with respect to potential for economic development and regional mineral potential evaluation. These deposits cover a broad range of size and economic viability. Information on the deposits has been compiled from numerous sources among which are company news releases and published papers. Mine reserves are those obtained from company reports and other company publications, which were committed for production at the time the reserves were reported. Other tonnage figures are not committed for production, but are known resources, some of which may become economically recoverable "mineable" reserves in the future as economic conditions and other factors permit development to proceed.

Users are requested to bring any errors or omissions in this publication to the attention of the Mining Resources Section, so that future editions may be improved. Undoubtedly the inventory listing will change from year to year as new important deposits and mines are added to the list and as other mine reserves are depleted.

Data is summarily tabulated under six headings:

Deposit: deposit or property name

Owner: last known owner

Location: location by NTS area and latitude-longitude

Mineralization Grade: average grade of tonnage estimate, coal quality

Tonnage: tonnes of mineralized rock

Comments: date of tonnage-grade estimate, source of estimate and other data on past or future production.

Terminology:

Ore reserve statistics are listed for all operating mines and mines committed for production.

Mineral deposit tonnage statistics for the most part represent identified in-place resources that are subeconomic given current economic conditions. However some of the deposits may contain economically recoverable reserves which may be committed for production in the future as economic and other conditions permit development.

TABLE 1: YUKON MINES OPERATING IN 1982

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
ANVIL (Faro)	Cyprus Anvil Mining Corporation	NTS 105K-6 LAT 62°21'35" LONG 133°22'00"	Lead 3.0% Zinc 4.8% Silver 37 g/t Gold n.a.*	34 million 24.5 million minable by open pit.	Producer since 1969. Reserves, Dec. 31, 1981. Mine closed June 4, 1982, due to low metal prices. Canadian Mines Handbook, 1982-83 and company annual reports. Produced to Dec. 31, 1981, 893 708 t lead, 1 086 115 t zinc, 712 227.6 kg silver and 151 kg gold (1981 only) from 31 339 000 t.
Keno Hill Area					
ELSA NO CASH DIXIE KENO HUSKY RUBY	United Keno Hill Mines Limited	NTS 105M-13, 14 LAT 63°54'32" LONG 135°28'55"	Lead 3.3% Silver 787 g/t and Lead 4.0% Silver 653 g/t	205 750 36 378	Producer, 1946-1982. Reserves Dec. 31, 1981. Stockpile, Dec. 31, 1981. Mines closed July 13, 1982, due low metal prices. Produced 4 368.65 t silver, 213 360 t lead, 149 617 t zinc and 1 897 t cadmium from 3 755 448 t. Company annual report for 1981 and Mining Journal, Aug. 13, 1982.
MIDDLE CHIEF	Whitehorse Copper Mines Limited	NTS 105D-10 LAT 60°40' LONG 135°10'	Copper 1.40% Gold 0.8 g/t Silver 7.9 g/t	0.87 million	Producer, 1967-1982. Reserves, Dec. 31, 1981. Production from Middle Chief started in 1981. Mine closed in Dec. 1982. To Dec. 31, 1981 milled 9 426 023 t to produce 113 850 t copper, 6 629 kg gold and 82 960 kg silver. Yukon Geology and Exploration, 1979-80, INA files and report by D. Tenney; Whitehorse Copper Belt Mining, Exploration and Geology.
TANTALUS BUTTE	Cyprus Anvil Mining Corporation	NTS 115I-1 LAT 62°07'22" LONG 136°15'48"	High volatile bituminous B	unknown	Seasonal producer from open pit Formerly underground operation. Production from end 1948 to end of 1981 was 333 683 t of coal INA files. Mine did not reopen in 1982.

* n.a. - not available

NOTES

TABLE 2: YUKON MINERAL DEPOSITS

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
		PRECIOUS METALS			
		Gold-Silver			
ARCTIC CARIBOU		NTS 105D-2 LAT 60°05'15" LONG 134°41'30"	Gold 13.0 g/t Silver 744 g/t	5 734	Past producer, 1968-69. Produced 239.5 kg gold and 6 438.3 kg silver from 50 802 t milled. National Mineral Inventory.
BROWN-McDADE	Rex Silver Mines Limited	NTS 115I-3 LAT 62°03' LONG 137°07'	Gold 12.69 g/t Silver 202 g/t	50 000	Tonnage from Department of Indian and Northern Affairs, Yukon Geology and Exploration 1979-80.
LAFORMA	Arctic Red Resources Limited	NTS 115I-6 LAT 62°16' LONG 137°06'	Gold 15 g/t Silver n.a.*	133 356	Past producer, 1939-40, 1965-66. Produced 94.8 kg gold and 17.7 kg silver. National Mineral Inventory and Northern Miner, March 3, 1983.
LONE STAR	Dawson Eldorado Gold Explorations Limited	NTS 115O-14 LAT 63°54' LONG 139°14'	Gold 4.4-5.82 g/t (values obtained 1930-31)	unknown	Past producer, 1909-14, 1925 and 1929-31. In the period 1909-14, 11 643 t were processed to produce approximately 52 kg gold. Yukon Geology and Exploration, 1979-80 and National Mineral Inventory. No figures available for other periods.
MOUNT NANSEN	Rex Silver Mines Limited	NTS 115I-3 LAT 62°03' LONG 137°09'	Gold 11.3 g/t Silver 446 g/t	181 440	Past producer, 1968-69, 1976. Produced approximately 137 kg gold, 3 780 kg silver, 107 t lead and 58 t zinc from 22 162 t.
VENUS	United Keno Hill Mines Limited	NTS 105D-2 LAT 60°01'13" LONG 134°37'45"	Gold 7.55 g/t Silver 226 g/t Lead 1.89% Zinc 1.37%	108 710	Past Producer, 1910-11, 1925, 1968-69. Mine renovated in 1981. Production plans were suspended in 1981. Production of 338 kg gold and 9 030 kg silver from 53 473 t hand-sorted and milled ore. National Mineral Inventory and Mining Journal, May 8, 1981.
		Silver-Lead-Zinc			
VAL	Prism Resources Limited	NTS 106C-5 LAT 64°16' LONG 133°41'	Lead) 13% Zinc) combined Silver 138 g/t	0.27 million	George Cross News Letter, March 26, 1981.
VERA	Prism Resources Limited	NTS 106C-5 LAT 64°18' LONG 133°44'	Lead) 3% Zinc)combined Silver 308 g/t	0.86 million	George Cross News Letter, March 26, 1981.

* n.a. - not available

TABLE 2: YUKON MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			BASE METALS		
			Zinc-Lead-(Silver)		
Anvil District					
DY	Cyprus Anvil Mining Corporation	NTS 105K-3 LAT 62°15' LONG 133°09'	Lead 5.6% Zinc 6.9% Silver 85 g/t	21 million	Archer, Cathro and Associates Limited estimate size to be 45-90 million t. Reserve figure used is from the Western Miner, May, 1981.
FIRTH	Cyprus Anvil Mining Corporation	NTS 105K-6 LAT 62°17' LONG 133°14'	Lead 5.0% Zinc 6.0% Silver 68.6 g/t	0.91 million	National Mineral Inventory.
GRUM (Champ)	Cyprus Anvil Mining Corporation	NTS 105K-6 LAT 62°16' LONG 133°13'	Lead 3.1% Zinc 5.0% Silver 47 g/t and Lead 5.31% Zinc 8.6% Silver 89 g/t	15.6 million (open pit) 10.3 million (underground)	Production planned for the second half of the 1980's. Total proven and probable reserves reported in 1977 was 27 million t of 6.76% zinc, 4.34% lead and 65 g/t silver. Canadian Mines Handbook, 1982-83.
SWIM	Cyprus Anvil Mining Corporation	NTS 105K-3 LAT 62°12' LONG 133°02'	Lead 4.0% Zinc 5.5% Silver 50 g/t	4.5 million	National Mineral Inventory.
VANGORDA	Cyprus Anvil Mining Corporation	NTS 105K-6 LAT 62°15'10" LONG 133°11'	Lead 3.5% Zinc 4.6% Silver 50 g/t Copper 0.27% Gold 0.6 g/t	6.1 million	Production planned for the second half of the 1980's. Canadian Mines Handbook, 1982-83.
BARB (Matt Berry)	Sovereign Metals Corporation Tinto Gold Corporation	NTS 105H-6 LAT 61°28' LONG 129°25'	Zinc 9% Silver 133 g/t	0.40 million	Yukon Geology and Exploration, 1979-80, p. 18.
CLARK	Jubilee Explorations Incorporated	NTS 106D-2 LAT 64°07'25" LONG 134°57'05"	Lead 5.64% Zinc 4.60% Silver 255 g/t	0.33 million	National Mineral Inventory.
CRAIG	McIntyre Mines Limited	NTS 106C-3 LAT 64°09' LONG 133°20'	Lead 8% Zinc 13% Silver 10.3 g/t	0.91 million	National Mineral Inventory.
GOZ CREEK	Barrier Reef Resources Limited	NTS 106C-7 LAT 64°25' LONG 132°51'	Zinc 8% including Zinc 13.5%	11 million 1.4 million	National Mineral Inventory.
Howards Pass Area					
ANNIV	Placer Development Limited Cygnus Mines Limited	NTS 105I-6 LAT 62°33' LONG 129°33'	Lead 2.1% Zinc 5.4%	61 million	This tonnage figure is drill indicated. Additional inferred tonnage in excess of 360 million t of 7% combined lead-zinc apply to Howards Pass property (see HOWARDS PASS (XY) in Northwest Territories deposits). Personal communication, 1982.

TABLE 2: YUKON MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Zinc-Lead-(Silver) (cont'd)		
HUNDERE	Cima Resources Limited Canadian Natural Resources Limited	NTS 105A-10 LAT 61° 31' LONG 128° 53'	Zinc 11.18% Lead 10.14 Silver 133 g/t	0.63 million in three zones	Yukon Geology and Exploration, 1979-80 p.140 and George Cross News Letter, Sept. 27, 1982.
Macmillan Pass Area					
JASON	Ogilvie Joint Venture Aberford Resources Limited	NTS 105O-1 LAT 63°10' LONG 130°10'	Lead 7.46% Zinc 7.15% Silver 86 g/t Barite n.a.*	9.07 million	Northern Miner, Oct. 14, 1982. Three zones; Main, South and End, Department of Indian and Northern Affairs, Yukon Geology and Exploration 1979-80, p. 216.
TOM	Hudson Bay Mining and Smelting Limited	NTS 105O-1 LAT 63°08' LONG 103°06'	Zinc 8.4% Lead 8.1% Barite 25% Silver 96 g/t and Zinc 4.9% Lead 0.9% Silver trace	7.8 million 9 million	Geological Setting and Stratiform Mineralization, Tom Claims, Yukon Territory by R.C. Carne, INA.
MEL	Sulpetro Minerals Limited	NTS 95D-6 LAT 60°21' LONG 127°24'	Zinc 5.6% Lead 2.05% Barite 52.1%	4.78 million	National Mineral Inventory.
MIDWAY	Regional Resources Limited	NTS 105B-2 LAT 60°00' LONG 130°55'	Lead) 18% Zinc) combined Silver 500 g/t	2.72 million	Mineralized zones in B.C. adjacent to the Yukon border. Tonnage and grade figures from Northern Miner, August 26, 1982.
QUARTZ LAKE (McMillan)	Noranda Exploration Company Limited	NTS 95D-12 LAT 60°31' LONG 127°56'	Zinc 10.0% Lead 5.0% Silver 56 g/t	0.91 million	Yukon Geology and Exploration, 1979-80, p. 18.
			Polymetallic Base Metals		
HART RIVER (Mark)	Hart River Mines Limited	NTS 116A-10 LAT 64° 38' LONG 136°51'	Zinc 3.65% Lead 0.87% Copper 1.45% Silver 50 g/t Gold 1.4 g/t	0.5 million	Yukon Mineral Inventory. Report, 1977.
TINTA HILL	Silver Tusk Mines Limited (60%), Panther Mines Limited (40%)	NTS 115I-7 LAT 62°16'45" LONG 136°57'30"	Zinc 6.03% Lead 4.71% Copper 0.37% Cadmium 0.049% Silver 183 g/t Gold 2.57 g/t	0.76 million	Yukon Geology and Exploration, 1979-80, p. 18.
			Copper		
CASH	Klotassin Joint Venture	NTS 115I-5 LAT 62°25' LONG 137°37'	Copper 0.17% MoS_2 0.018%	40 million	Grade average is arithmetic average of 20 drill holes. National Mineral Inventory.

TABLE 2: YUKON MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Copper (cont'd)		
CASINO	Casino Silver Mines Limited	NTS 115J-10, 15 LAT 62°44' LONG 138°49'	Copper 0.37% MoS_2 0.04%	162 million	Silver bearing veins have been exploited by surface trenching. Yukon Geology and Exploration, 1979-80, INA files and Mining Review May/June 1982.
JOHOBO	Government of Canada (Parks Canada)	NTS 115A-5 LAT 60°29' LONG 137°34'	Copper n.a.*	45 360	Past Producer, 1958-62. Tonnage is for copper-bearing material in the mine dump. Shipped 3 309 t of high-grade ore averaging 22% copper and 58.6 g/t silver. National Mineral Inventory.
LUCKY JOE	Rio Tinto Canadian Exploration Limited	NTS 1150-11 LAT 63°35' LONG 139°30'	Copper 0.3% MoS_2 n.a.*	unknown	Area of mineralization is 30m wide with a strike length of 2.5 km.
MINTO/DEF	Asaco Incorporated Silver Standard Mines Limited United Keno Hill Mines Limited	NTS 115I-11 LAT 62°37'00" LONG 137°15'00"	Copper 1.86% Silver 6.84 g/t Gold 0.51 g/t	6.57 million	National Mineral Inventory.
WELLGREEN	Hudson-Yukon Mining Company Limited	NTS 115G-5 LAT 61°28' LONG 139°32'	Copper 1.42% Nickel 2.05% Cobalt 0.07% minor platinum, palladium and gold.	0.59 million	Past Producer, 1972-73. Reserves from 1971. Produced 153.6 kg platinum, 2 821 t nickel and 1 881 t copper from 171 652 t milled. INA files and National Mineral Inventory.
Whitehorse Copper Belt					
BEST CHANCE	Whitehorse Copper Mines Limited	NTS 105D-11 LAT 60°40'30" LONG 135°07'	Copper 0.71%	0.45 million	Tonnage from report by D. Tenney, Whitehorse Copper Belt: Mining, Exploration and Geology. Indian and Northern Affairs, 1981.
BLACK CUB	Whitehorse Copper Mines Limited	NTS 105D-10 LAT 60°34'20" LONG 134°56'50"	South Zone Copper 1.25% North Zone Copper 0.82%	0.02 million 0.15 million	Past producer, 1970-71. Mined 186 386 t of ore from South Zone. Tonnage from report by D. Tenney.
COWLEY PARK	Whitehorse Copper Mines Limited	NTS 105D-10 LAT 60°34'14" LONG 134°52'22"	Copper 0.93%	0.76 million	Tonnage from report by D. Tenney.
GEM	Whitehorse Copper Mines Limited	NTS 105D-10 LAT 60°34'45" LONG 134°57'09"	Copper 1.01%	0.63 million	Tonnage from report by D. Tenney.
KEEWENAW	Whitehorse Copper Mines Limited	NTS 105D-10 LAT 60°34'40" LONG 134°57'25"	Copper 1.06%	0.20 million	Tonnage from report by D. Tenney.
KODIAC CUB	Whitehorse Copper Mines Limited	NTS 105D-10 LAT 60°34'42" LONG 134°57'10"	Copper 1.18%	0.06 million	Tonnage from report by D. Tenney.
WILLIAMS CREEK	Dawson Range Joint Venture, c/o Archer, Cathro and Associates Limited	NTS 115I-7 LAT 62°21' LONG 136°42'	Copper 1.0% Gold n.a. * Silver n.a.*	14.5 million	Yukon Geology and Exploration, 1979-80, p. 22

TABLE 2: YUKON MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
		TUNGSTEN-MOLYBDENUM			
CAB-RISBY	Imperial Metals Corporation Hudson Bay Exploration and Development Company Limited	NTS 105F-15 LAT 61°52' LONG 133°23'	WO_3 0.81% Including 1.0%	2.7 million 0.5 million	George Cross News Letter, June 4, 1982.
DUBLIN GULCH-MAR (Ray Gulch)	Canada Tungsten Mining Corporation	NTS 106D-4 LAT 64°02' LONG 135°50'	WO_3 0.81%	5.4 million	June 9, 1982 (report filed with the Toronto Stock Exchange). Mining Journal, May 22, 1981 reported 7.25 million t of 0.5% WO_3 including 3.625 million t of 0.96% WO_3.
LOGTUNG	Amax Incorporated Logtung Resources Limited	NTS 105B-4 LAT 60°01' LONG 131°06'	WO_3 0.13% MoS_2 0.052%	162.4 million	Western Miner, Nov. 1981.
MACTUNG	Amax Incorporated	NTS 105O-8 LAT 63°17'15" LONG 130°09'	WO_3 0.95% Including 1.02%	57.15 million 12.34 million	Northern Miner, Dec. 10, 1981 and Mining Magazine, Nov. 1981.
RED MOUNTAIN	Amoco Canada Petroleum Company Limited Tintina Silver Mines Limited	NTS 105C-13, F-4 LAT 61°00' LONG 133°44'	MoS_2 0.22% Including .27% Including .31%	72 million 37 million 22 million	Northern Miner, Dec. 10, 1981.
		COAL			
Bonnet Plume Basin					
BONNET PLUME	Aberford Resources Limited	NTS 106E-15 LAT 65°50' LONG 134°55'	Lignite	1.4 million	Estimate by Geological Survey of Canada.
ILLTYD CREEK	Aberford Resources Limited	NTS 106E-2,3,6,7 LAT 65°15' LONG 135°00'	High volatile bituminous C	650 million	Tonnage could be greater than 1 billion t in situ. Tonnage from Western Miner, March, 1981.
Carmacks Area					
FIVE FINGERS		NTS 115I-1 LAT 62°12'18" LONG 136°20'00"	High volatile bituminous C	unknown	Past producer, 1904, 1907-08. Five Fingers and Tantalus produced 111 291 t of coal from 1904-1922. INA files.
TANTALUS		NTS 115I-1 LAT 62°05'40" LONG 136°15'34"	High volatile bituminous	unknown	Past producer, 1905-1922. See Five Fingers. INA files.
LAPIE RIVER		NTS 105F-15 LAT 61°57' LONG 132°36'	High volatile bituminous	1.1 million	Inferred resource by Geological Survey of Canada.
NORDENSKIOLD		NTS 105E-5 LAT 61°21' LONG 136°05'	Bituminous	3.7 million	Two seams. Footwall Seam is 2m and Cairnes Seam is 4.7 to 9.6m thick. Drilling by Arjay Kirker Resources Limited in 1972 indicated 2.5 million t for the Cairnes Seam. INA assessment files.

TABLE 2: YUKON MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Coal (cont'd)		
ROCK RIVER	Sulpetro Minerals Limited	NTS 95D-11 LAT 60°41'29" LONG 127°12'47"	Lignite A to Sub-bituminous C	56 million	Resources estimated from two drill hole intersections to a depth of 80m. Whitehorse Geoscience Forum, Dec. 6, 1983.
SOURDOUGH MINE		NTS 116B-2 LAT 64°08' LONG 138°57'	Lignite	unknown	Past producer, 1899-1903, 1939-40. Produced 11 452 t in 1899-1903 period. No production figures available for 1939-40. INA files.
			BARITE		
MOOSE	Nuspar Resources Limited	NTS 115O-1 LAT 63°04' LONG 130°12'	Barite 84% Silica 12.14%	2.7 million	Yukon Geology and Exploration 1979-80, p. 30.
TEA	Yukon Barite Company Limited	NTS 105O-2 LAT 63°01' LONG 130°36'	Barite 90-93%	0.45 million	Tonnage includes 0.27 million t of direct shipping grade. Produced 10 000 t in Oct. - Dec., 1982. INA assessment files.
			ASBESTOS		
CALEY	R. Gillespie	NTS 116C-8 LAT 64°18'15" LONG 140°12'05"	Asbestos medium to high grade group 4	0.91 million	Tonnage and grade from Northern Miner, Jan. 19, 1967. In 1978, 296 217 t was mined and shipped to the Clinton Creek mill for processing. National Mineral Inventory.
CLINTON CREEK	Brinco Limited	NTS 116C-8 LAT 64°26'42" LONG 140°43'15"	Asbestos n.a.*	unknown	Past producer, 1967-1978. Produced 930 623.4 t of asbestos including the materiel from the Caley deposit. INA files.
REX	Golden Gate Explorations Limited	NTS 115A-11 LAT 60°44' LONG 137°18'	Asbestos 1-2%	3.63 million	National Mineral Inventory.
			IRON		
CREST	Chevron Standard Limited	NTS 106F-2,3,6,7 LAT 65°10' LONG 132°45'	Iron 46% P_2O_5 0.3%	18 billion (resource) 5.4 billion indicated	National Mineral Inventory.
DELTA-DAWN (Mt. Davies-Gilbert)		NTS 117A-8 LAT 68°30' LONG 136°30'	Iron 15-20% P_2O_5 1.5-3.0%	10's of billions (resource)	Better known as source of exotic mineral specimens of lazulite, wardite and others. Geological Survey of Canada estimates.

TABLE 2: YUKON MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
		Iron (cont'd)			
PAGISTEEL	Zelon Enterprises	NTS 106D-16 LAT 65°40' LONG 134°16'48"	Iron 29.2%	1 million	National Mineral Inventory.
RUSTY SPRINGS	Rio Alto Exploration Limited	NTS 116K-9 LAT 66°31'12" LONG 140°16'	Iron 55%	45 million	Company annual report for 1975.
SHELL CREEK		NTS 116C-9 LAT 64°35' LONG 140°23'	Iron 25%	45 million	Geological Survey of Canada estimate.

* n.a. - not available

NOTES

TABLE 3: NORTHWEST TERRITORIES MINES OPERATING IN 1982

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
Camsell River Area					
TERRA (Norex, Smallwood)	Terra Mines Limited	NTS 86F-12 LAT 65°35'15" LONG 117°57'25'	Silver 1803 g/t Copper 0.28% Lead 1.08%	10 183	Producer, 1978-81. Mining resumed second half of 1982. Reserves from company statement of material facts (VSE), Feb. 10, 1983.
TERRA (North)	Terra Mines Limited	NTS 86E-9 LAT 65°36'28" LONG 118°06'55"	Silver 970 g/t Copper 0.07%	22 037	Producer, 1979-82.
TERRA (Silver Bear)	Terra Mines Limited	NTS 86E-9 LAT 65°36'15" LONG 118°06'55'	Silver 936 g/t Copper 0.15% (1976) Bismuth) Uranium) minor	12 401	Producer, 1969-1981. Production resumed in 1982. Milled 347 735 t to Feb., 1981. Produced 382.57 t silver, 1 709.3 t copper, 519 kg bismuth (1971) and 251 kg uranium (1978). Company annual reports and INA files.
CANTUNG	Canada Tungsten Mining Corporation	NTS 105H-16 LAT 61°57' LONG 128°15'	WO_3 1.32% Copper 0.23% (1976)	2.76 million	Producer, 1962 to present. Reserves, Dec. 31. 1982. To end of 1982 produced 38 850 t WO_3 and 1 233.5 t copper from 3 188 081 t. National Mineral Inventory and company annual report.
CULLATON LAKE	Cullaton Lake Gold Mines Limited	NTS 65G-8 LAT 61°17' LONG 98°30'	Gold 17.1 g/t	0.18 million	Producer, Nov. 1981. Reserves, Dec. 31, 1982. Produced 11.6 kg gold and 141.5 g silver from 8 666 t of ore in 1981. Company report and Northern Miner, Jan. 20, 1983.
LUPIN	Echo Bay Mines Limited	NTS 76E-14 LAT 65°45'52" LONG 110°13'35"	Gold 13.5 g/t	3.57 million	Initial production in May, 1982. Reserves as of Dec. 31, 1982 to a depth of 390 m. Toronto Globe and Mail, Feb. 25, 1983.
NANISIVIK	Nanisivik Mines Limited	NTS 48C-1 LAT 73°02' LONG 84°30'	Zinc 6.6% Lead 4.3% Silver n.a.* Cadmium n.a.*	4.54 million	Producer, 1976 to present. Reserves, Dec. 31, 1981. Produced to Dec. 31, 1981, 45 287 t lead and 351 761 t zinc from 2 866 040 t ore. Mines and Mineral Activities, 1981.
PINE POINT MINE A-55 N-204 N-42 W-17 S-65	Pine Point Mines Limited	NTS 85B-10,15,16 LAT 60°50' LONG 114°25'	Lead 1.9% Zinc 5.4%	37.5 million	Producer, 1964 to present. Dec. 31, 1981 reserves. Deposits shown on map represent the more than 50 deposits at Pine Point. Produced to Dec 31, 1981, 1 379 638 t lead and 2 860 258 t zinc from 49 800 786 t of ore. Company annual reports, Canadian Minerals Yearbook and INA files.

TABLE 3: NORTHWEST TERRITORIES MINES OPERATING IN 1982 (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
POLARIS (Panhandle Zone)	Cominco Limited	NTS 68H-8 LAT 75°26' LONG 96°25'	Zinc 20% Lead 5.5%	3.5 million	Initial production in Feb., 1982. Tonnage from Canadian Mining Journal, July, 1982.
(Keel Zone)		NTS 68H-8 LAT 75°26' LONG 96°25'	Zinc 13.5% Lead 3.7%	21-22 million	Canadian Mining Journal, July, 1982.
Yellowknife Area					
CON	Cominco Limited	NTS 85J-8 LAT 63°26'22" LONG 114°22'08"	Gold 16.8 g/t Silver n.a.*	1.9 million	Producer, 1938 - present. Reserves, Dec. 31, 1981. Includes Rycon which produced 816 480 t of ore from 1939 to 1958. Produced 101 536.4 kg gold and an estimated 25 000 kg silver from 5 244 443 t of ore to Dec., 1981. National Mineral Inventory and company reports.
GIANT	Giant Yellowknife Mines Limited	NTS 85J-9 LAT 62°30'10" LONG 114°21'25"	Gold 7.89 g/t Silver 0.77 g/t (1981)	1.06 million	Producer, 1948 - present. Reserves, Dec. 31, 1981. To Dec. 31, 1981 produced 157 301.2 kg gold and 28 472.7 kg silver from 9 273 857 t of ore. Company annual reports.
LOLOR	Giant Yellowknife Mines Limited	NTS 85J-9 LAT 62°30'10" LONG 114°21'25"	Gold 7.9 g/t	0.015 million	Producer, 1967 - present. Reserves, Dec. 31, 1981. To Dec. 31, 1981 produced 5586.8 kg gold from 372 255 t of ore. Any silver production included in Giant silver production. Company annual reports.
SUPERCREST (Akaitcho)	Giant Yellowknife Mines Limited	NTS 85J-9 LAT 62°31'30" LONG 114°21'	Gold 11.3 g/t	0.024 million	Producer 1973 - present. Reserves, Dec. 31, 1980. To Dec. 31, 1981 produced 8187.6 kg gold from 469 816 t of ore. Silver production included in Giant silver production. Company annual reports.

* n.a. - not available

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			PRECIOUS METALS		
			Gold		
ARCADIA	Canuc Resources Limited Arcadia Exploration Limited	NTS 76M-11 LAT 67°41'44" LONG 111°22'28"	Gold 9.6 g/t	0.806 million	Average width of 4.4 m. Northern Miner, Dec. 2, 1982.
ARSENO	Nationwide Minerals Limited	NTS 86B-6 LAT 64°16'30" LONG 115°12'30"	Gold 15.8 g/t	0.11 million	National Mineral Inventory.
BUGOW		NTS 85O-4 LAT 63°14' LONG 115°40'	Gold 5.14 g/t	0.050 million	National Mineral Inventory.
CAMLAREN	Discovery Mines Limited Camlaren Mines Limited	NTS 85I-14 LAT 62°59'05" LONG 113°12'05"	Gold 19.9 g/t Silver n.a.*	unknown	Past producer, 1962-63, 1979-81. Produced 1 017.7 kg gold and 311.9 kg silver from 58 111 t of ore. Mineralization open at depth below 1000 foot level (305 m depth). National Mineral Inventory and INA files.
COLOMAC/HYDRA	Johnsby Mines Limited	NTS 86B-6 LAT 64°23'55" LONG 115°05'08"	Gold 1.82 g/t or 2.94 g/t	18.1 million 11.8 million	Reserves by Cominco Limited in 1974 for larger figure and 1946 for smaller tonnage but higher grade. National Mineral Inventory.
CRESTAURUM	Northbelt Yellowknife Mines Limited (Giant Yellowknife Mines Limited)	NTS 85J-9 LAT 62°35' LONG 114°21'10"	Gold 18.86 g/t	0.091 million	Reserves to 122m depth. National Mineral Inventory.
DAF		NTS 85I-14 LAT 62°54'21" LONG 113°13'58"	Gold n.a.* Silver n.a.*	Unknown	Past producer, 1947-48. Produced 8.43 kg gold and 0.89 kg silver from 278.5 t. National Mineral Inventory.
DELORO	Anglo United Development Corporation Limited	NTS 85N-8 LAT 63°21'05" LONG 116°18'15"	Gold 13.7 g/t	0.046 million	Tonnage to 152 m and excludes 20 975 t grading 12.5 g/t Au in crown pillar (1981 annual report).
DISCOVERY	Discovery Mines Limited	NTS 85P-4 LAT 63°11'12" LONG 113°53'30"	Gold 20 g/t (1946) 28.1 g/t (1966)	unknown	Past producer, 1949-68. Tonnage in 1966 was 0.173 million t. Produced 32 004 kg gold from 937 138 t of ore. National Mineral Inventory.
GAB		NTS 85P-4 LAT 63°06'10" LONG 113°32'30"	Gold 15.1 g/t (diluted)	unknown	Vein 250' long, 4' wide and to a depth of 75'. National Mineral Inventory.
GOLDCREST	Johnsby Mines Limited	NTS 86B-6 LAT 64°22'42" LONG 115°06'30"	Gold 4.94 g/t	1.16 million	Tonnage in 1945. National Mineral Inventory.
JES	Ashnola Mining Company Limited	NTS 85O-1 LAT 63°01'40" LONG 114°10'10"	Gold 16.46 g/t	0.009 million	Tonnage reported George Cross News Letter, March 13, 1981.
JINGO	Barons Oil Limited	NTS 86B-12 LAT 64°35'20" LONG 115°32'35"	Gold 10.9 g/t	0.037 million	Tonnage calculated from 4 veins to depth of 30 m. National Mineral Inventory.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Gold (cont'd)		
JOON (June)	D. Nickerson	NTS 85I-7 LAT 62°25'0" LONG 112°51'08"	Gold 68.6 g/t	0.002 million	Past producer, 1977-78. Tonnage from 1976. Produced 9.33 kg gold with some silver from several hundred t of ore. Gold Deposits of the Northwest Territories, by W.A. Padgham; In Proceedings of the Gold Workshop, Yellowknife, N.W.T., Dec. 1979.
LETA	Lexindin Gold Mines Limited	NTS 86B-6 LAT 64°17'12" LONG 115°12'36"	Gold 10.6 g/t	0.068 million	Tonnage from 1947 drilling on No. 1 Zone. There are 9 other zones in the area. National Mineral Inventory.
MOS		NTS 85O-4 LAT 63°02' LONG 115°30'30"	Gold 4.46 g/t	0.26 million	National Mineral Inventory.
NORMA	Consolidated Beaulieu Mines Limited	NTS 85I-7 LAT 62°24'46" LONG 112°54'22"	Gold 34.3 g/t	0.011 million	Past producer, 1947-48. Tonnage from 1946. Produced 1.49 kg gold from 419 t of material. National Mineral Inventory.
NORRIS LAKE	Granex Mines Limited	NTS 86B-5 LAT 64°26'30 LONG 115°45'30"	Gold 7.8 g/t	0.073 million	Tonnage in 1947. National Mineral Inventory.
NORTH INCA		NTS 86B-6 LAT 64°15'48" LONG 115°13'18"	Gold 18.5 g/t	0.021 million	Tonnage in 1949. National Mineral Inventory
NOSE	Shield Resources Limited	NTS 85J-16 LAT 62°54'50" LONG 114°14'	Gold 14.5 g/t Silver n.a.*	unknown	Past producer, 1967. Produced 15.1 kg of gold and 3.5 kg of silver from 1035.1 t of ore. Mines and Mineral Activities, 1972 and G.S.C. Paper 70-70.
OLD PARR		NTS 85I-12 LAT 62°44' LONG 113°31'	Gold n.a.* Silver n.a.*	unknown	Past producer, 1963-65. Produced 7.25 kg gold and 0.37 kg silver (1964 only) from an unknown quantity of material. National Mineral Inventory.
OUTPOST ISLAND	Tungsten Corporation of Canada Limited	NTS 85H-11 LAT 61°44' LONG 113°28'	Gold 16.7 g/t Silver 0.13 g/t Copper 0.28% WO_3 0.07%	unknown	Past producer, 1941-42. Grade based on metal recovered during life of the mine. Milled 18 438 t to produce 308.1 kg of gold. Gold Deposits of the Northwest Territories, by W.A. Padgham; In Proceedings of the Gold Workshop, Yellowknife, N.W.T., Dec. 1979.
PENSIVE		NTS 85I-11 LAT 64°44'10" LONG 113°20'	Gold n.a.*	unknown	Past producer, 1939. Produced 10.9 kg gold from several thousand t of material. National Mineral Inventory.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
		Gold (cont'd)			
PTARMIGAN	Cominco Limited	NTS 85J-9 LAT 62°31'10" LONG 114°11'50"	Gold 14.7 g/t	0.10 million	Past producer, 1941-42. Produced 370.8 kg gold from 31 234 t of ore. National Mineral Inventory.
RICH		NTS 85J-8 LAT 62°27'50" LONG 114°18'50"	Gold 428.6 g/t	unknown	Past producer, 1935. Grade based on average assay of ore shipped in 1935. Produced 6 kg gold from 14.1 t of ore. National Mineral Inventory.
ROD	D. Nickerson	NTS 85J-8 LAT 62°29'50" LONG 114°26'	Gold 39.4 g/t	0.002 million	Past producer, 1978-79. Reported production of 0.47 to 0.62 kg gold from 10.9 t of material. Gold Deposits of the Northwest Territories, by W.A. Padgham; in Proceedings of the Gold Workshop, Yellowknife, N.W.T. Dec. 1979. National Mineral Inventory.
RUTH	Cominco Limited Hidden Lake Gold Mines Ltd.	NTS 85I-7 LAT 62°27'45" LONG 112°34'15"	Gold 67.2 g/t	0.002 million	Past producer, 1942, 1959. Tonnage and grade from 1973. Produced 16.8 kg gold and 2.8 kg silver from 704.7 t of ore. Hidden Lake Gold Mines statement of material facts (VSE), Feb. 24, 1983.
SALMITA	Giant Yellowknife Mines Limited	NTS 76D-3 LAT 64°04' LONG 111°14'	Gold 28 g/t	0.140 million	Tonnage from Northern Miner, Oct. 21, 1982.
SPIDER	Treasure Island Resources Corporation	NTS 86B-6 LAT 64°29'35" LONG 115°07'45"	Gold 15.5 g/t	0.072 million	Tonnage in 1980. Company prospectus, April 1, 1982.
TA (Bullmoose Lake)	Terra Mines Limited	NTS 85I-7 LAT 62°20'40" LONG 112°44'50"	Gold 13.7 g/t	0.002 million	Past producer, 1940-41. Produced 6.53 kg gold from 10.9 t of material grading 600 g/t gold. National Mineral Inventory and statement of material facts (VSE), Feb. 10, 1983.
TERM POINT		NTS 55K-1 LAT 62°08' LONG 92°28'	Gold n.a.*	unknown	Past producer, 1928. Nipissing Mining Co. mined 2.7 kg gold. "Mine Finders" by B.F. Townsley, 1935.
THOMPSON-LUNDMARK	Thompson-Lundmark Gold Mines Limited	NTS 85I-11 LAT 62°36'45" LONG 113°28'15"	Gold 6.86 g/t Silver n.a.*	0.053	Past producer, 1941-43, 1947-49. Produced 2 187.8 kg gold and 428.7 kg silver from 121 537 t of ore. Reserves are in the Kim Vein. Addition reserves of 12 428 t of 5.49 g/t gold. National Mineral Inventory and Northern Miner, Jan. 27, 1983.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Gold (cont'd)		
TIN	Consolidated Five Star Resources Limited	NTS 85J-9 LAT 62°32'35" LONG 114°10'55"	Gold 13.1 g/t (diluted)	0.002 million	Past producer, 1950. Produced 0.72 kg gold from 27.2 t of material. Reserves from 1981 company annual report.
TUNDRA (Taurcanis, Bulldog)	Giant Yellowknife Mines Limited	NTS 76D-3 LAT 64°02'12" LONG 111°11'36"	Gold 7.82 g/t Silver n.a.*	0.073 million	Past producer, 1964-68. Produced 3 251.5 kg gold and 644.5 kg silver from 170 285 t of ore. National Mineral Inventory.
VIKING		NTS 85O-1 LAT 63°06'18" LONG 114°03'18"	Gold 20.6 g/t	unknown	Grade of 1968. Reseves reported as 700 tons per vertical foot. National Mineral Inventory.
WINTER LAKE (Bruce-Avis)	Discovery Mines Limited	NTS 85P-4 LAT 63°10'10" LONG 113°55'20"	Gold 9.9 g/t	0.21 million	National Mineral Inventory.
WT	Precambrian Shield Resources Limited Numac Oil & Gas Limited	NTS 85I-14 LAT 62°47'15" LONG 113°14'10"	Gold 5.38 g/t	0.058 million	National Mineral Inventory.
Yellowknife Area					
NEGUS	Cominco Limited	NTS 85J-8 LAT 62°26'10" LONG 114°21'	Gold n.a.* Silver n.a.*		Past producer, 1939-1952. Produced 7 956.4 kg gold and 1 324.9 kg silver from 445 352 t. Silver production only to 1948 from 218 506 t of ore. Location close to Con Mine. National Mineral Inventory.
VOL	Cominco Limited	NTS 85J-8 LAT 62°27' LONG 114°21'30"	Gold n.a.*		Past producer, 1964-1967. Produced 314.7 kg gold from 19 923 t of ore. Location close to Con Mine. National Mineral Inventory.
			Silver		
Camsell River Area					
SILVER BAY	Northrim Mines Limited	NTS 86F-12 LAT 65°35'45" LONG 117°58'35"	Silver 109 g/t	unknown	Past producer, 1971-72, 1976-79. Company in receivership in 1979. Milled 3 629 t in 1971-72 but no record of silver production. Produced 3 310.6 kg silver from 7 159 t in 1976-79. National Mineral Inventory and INA files.
HOPE BAY	Hope Bay Mines Limited	NTS 77A-3 NAT 68°11'00" LONG 106°32'45"	Silver n.a.*	unknown	Past producer, 1973-75. Produced 2 507.7 kg silver from 1 417 t milled and 9 t of hand-sorted ore. National Mineral Inventory.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Silver (cont'd)		
Port Radium Area					
ECHO BAY	Echo Bay Mines Limited	NTS 86L-1, K-4 LAT 66°06' LONG 118°00'	Silver 1618 g/t (1976) Copper 1.1% (1976)	unknown	Past producer, 1964-1976. Produced 811.6 t silver and 4 791.4 t copper from 390 210 t of ore. National Mineral Inventory, Canadian Mines Handbook and INA files.
EL-BONANZA	El-Bonanza Mining Corporation	NTS 86L-1 LAT 66°00'10" LONG 118°04'30"	Silver 318 kg/t (1935 highgrade) Copper n.a.* Uranium n.a.*	unknown	Past producer, 1934-36 and 1965. Produced 938.5 kg silver from 3 t of high-grade ore in 1935. Produced 272 t of stockpile material in 1965. No grade reported. National Mineral Inventory.
			BASE METALS		
			Zinc-Lead-(Silver)		
BEAR-TWIT	Bethlehem Copper Corporation	NTS 106A-3 LAT 64°02' LONG 129°22'	Zinc 5.4% Lead 2.6%	9.07 million	National Mineral Inventory and "Mississippi Valley Type Lead-Zinc Districts of Northern Canada", by W.A. Gibbins, INA, 1982.
GAYNA RIVER	Rio Tinto Canadian Exploration Limited	NTS 106B-15 LAT 64°56' LONG 130°41'	Zinc 6%	unknown	Body "A" deposit is estimated to be 30m wide, 244m long and 6 to 14m thick. Eighteen showings are known. National Mineral Inventory.
			Zinc 4.7% Lead 0.3%	50 million	Resource estimate from "Mississippi Valley Type Lead-Zinc Districts of Northern Canada", by W.A. Gibbins, INA, 1982.
Howards Pass Area					
HOWARDS PASS (XY)	Placer Development Limited Cygnus Mines Limited	NTS 105I-6 LAT 62°28' LONG 129°10'	Lead 2.1% Zinc 5.4% including Lead 5.5% Zinc 10.6%	59 million 8.2 million	These are drill indicated tonnages. Additional inferred tonnage in excess of 360 million t of 7% combined lead-zinc Howards Pass property (see ANNIV in Yukon deposits). Personal Communication, 1982.
JUDGE DALY		NTS 120C-7 LAT 81°22' LONG 66°30'	Combined lead and zinc equivalent to 3-9% zinc	unknown	Mineralization traced for 396m with a gravity anomaly. National Mineral Inventory.
Little Cornwallis Island					
ECLIPSE	Cominco Limited	NTS 68H-9 LAT 75°32' LONG 96°10'	Lead 12.4% Zinc 2.18%	1.4 million	National Mineral Inventory.
Pine Point Area					
SLAVE REEF X-25	Westmin Resources Limited	NTS 85B-11 LAT 60°44'15" LONG 115°03'15"	Lead 3.3% Zinc 9.1%	3.45 million	Total tonnage for Slave Reef Project are 7.26 million t of 10.3% combined lead-zinc (Western Miner, June, 1981).

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Zinc-Lead-(Silver) (cont'd)		
SLAVE REEF R-190	Westmin Resources Limited	NTS 85B-11 LAT 60°44'15" LONG 115°08'	Lead 6.42% Zinc 11.59%	1.12 million	National Mineral Inventory.
SLAVE REEF V-46	Westmin Resources Limited	NTS 85B-11 LAT 60°44'30" LONG 115°03'45"	Lead) 8% Zinc) combined	0.54 million	Deposit is 2000 feet NW of the X-25. National Mineral Inventory.
RAM-ROD	Ramrod Mining Corporation	NTS 95E-12 LAT 61°32'20" LONG 127°33'45"	Zinc 5.42% Lead 5.12% Silver 24.3 g/t	1.48 million	National Mineral Inventory.
WRIGLEY	Cominco Limited	NTS 95O-4 LAT 63°14' LONG 123°35'	Lead) 15% Zinc) combined Silver n.a.*	0.9 - 1.8 million	Tonnage estimated by R.W. Hornal, IAND, 1972.
			Polymetallic Base Metals		
GONDOR	Kidd Creek Mines Limited Noranda Mines Limited	NTS 76E-12 LAT 65°33'50" LONG 111°47'30"	Zinc 16.4% Lead 0.4% Copper 0.1% Silver 0.7 g/t	unknown	Assays from drill hole G-13 over length of 46.5 m. Yellowknife Geoscience Forum, Dec. 1982.
Hackett River Area					
A ZONE	Bathurst Norsemines Limited Cominco Limited (44%)	NTS 76F-16 LAT 65°55'00" LONG 108°22'00"	Zinc 8.5% Lead 1.4% Copper 0.25% Silver 240 g/t Gold 1.7 g/t	3.63 to 4.5 million	Total Hackett River resources are listed as 19.5 million t of 4.98% zinc, 0.75% lead, 0.41% copper, 150 g/t silver and 0.45 g/t gold (1975). Includes the A, Cleaver, Boot Lake and other zones of mineralization of Hackett River. National Mineral Inventory.
BOOT LAKE	Bathurst Norsemines Limited Cominco Limited	NTS 76F-16 LAT 65°54'55" LONG 108°25'50"	Zinc 4.97% Lead 0.99% Copper 0.29% Silver 201 g/t Gold 0.5 g/t	4.5 million	Another 1.8 million t of lower grade mineralization also occurs in the Boot Lake zone. National Mineral Inventory.
CLEAVER ZONE	Bathurst Norsemines Limited Cominco Limited	NTS 76F-16 LAT 65°55'55" LONG 108°27'30"	Zinc 7.07% Lead 1.04% Copper 0.46%	3.63 million	National Mineral Inventory.
			and Zinc 1.08% Lead 0.84% Copper 0.48% Silver 33.3 g/t	3.63 million	National Mineral Inventory.
HENINGA LAKE	Sulpetro Minerals Limited	NTS 65H-16 LAT 61°46'25" LONG 96°12'10"	Zinc 9.0% Copper 1.3% Silver 68.6 g/t Gold 1 g/t	5.44 million	National Mineral Inventory.
HIGH LAKE	Kennco Explorations (Canada) Limited	NTS 76M-7 LAT 67°22'50" LONG 110°51'10"	D Zone Zinc 3.6% Lead 0.2% Copper 2.0% Silver 37.7 g/t	2.54 million	Total 4.72 million t grading 3.53% copper, 2.46% zinc, 0.79 g/t gold and minor silver and lead. Gold Deposits of the Northwest Territories, by W.A. Padgham in proceedings of of the Gold Workshop, Yellowknife, N.W.T., Dec. 1979.
			and AB Zone Copper 5.4% Zinc 1.1%	2.18 million	

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Polymetallic Base Metals (cont'd)		
HOOD RIVER #10	Kidd Creek Mines Limited	NTS 86I-2 LAT 66°04'40" LONG 112°45'00"	Zinc 3.5% Copper 5.0% Silver 34.3 g/t	0.45 million	National Mineral Inventory.
HOOD RIVER #41	Kidd Creek Mines Limited	NTS 86I-2 LAT 66°03'30" LONG 112°42'00"	Zinc 4.2% Copper 1.57% Silver 17.1 g/t	0.29 million	Combined tonnage potential at #41 and #41A (an extension of #41 to the southeast) may be 2 million t, Yellowknife Geoscience Forum, Dec., 1981.
INDIAN MOUNTAIN LAKE - BB Zone	Initiative Explorations Limited	NTS 75M-2 LAT 63°01'57" LONG 110°56'57"	Zinc 10.3% Lead 0.85% Silver 118.3 g/t Cadmium 0.1%	0.88 million	Total of all Indian Mountain Lake (BB, Kennedy Lake and Susu Lake) zones is 1.61 million t. National Mineral Inventory.
- KENNEDY LAKE	Initiative Explorations Limited	NTS 75M-2 LAT 63°02' LONG 110°57'	West Zone Copper 1.12% Main Zone Zinc 7.3% Lead 1.1% Silver 137 g/t	0.56 million 0.04 million	National Mineral Inventory.
- SUSU LAKE	Initiative Explorations Limited	NTS 75M-2 LAT 63°00'40" LONG 110°47'30"	Copper 0.95%	0.13 million	National Mineral Inventory.
IZOK LAKE	Kidd Creek Mines Limited	NTS 86H-10 LAT 65°38'00" LONG 112°47'45"	Zinc 13.77% Lead 1.42% Copper 2.82% Silver 70.3 g/t	11 million	National Mineral Inventory.
MUSK	Noranda Mines Limited	NTS 76G-5 LAT 65°19'30" LONG 107°32'	Zinc 10.0% Lead 1.4% Copper 1.2% Silver 342.8 g/t	0.34 million	Noranda personel feel there is excellent potential for much larger tonnage, Yellowknife Geoscience Forum, Dec. 1981.
PRAIRIE CREEK	Cadillac Explorations Limited	NTS 95F-7, 10 LAT 61°33' LONG 124°47'	Zinc 13.5% Lead 10.9% Silver 191 g/t Copper 0.52% Cadmium 0.087%	1.94 million	Tonnage is from six zones of mineralization. Thirteen zones are known. Mine construction 97% complete. National Mineral Inventory and Northern Miner, July 22, 1982.
YAVA	Conwest Exploration Limited Westmin Resources Limited	NTS 76G-12 LAT 65°36' LONG 107°55'	Zinc 5% Lead 1.5% Copper 0.6-1.5% Silver 103-137 g/t Gold trace to 0.34 g/t	1.13 million	National Mineral Inventory.
			Copper		
BURNT CREEK	Pickle Crow Exploration Limited	NTS 86O-5 LAT 67°17'55" LONG 115°48'55"	Copper 9.1%	0.018 million	National Mineral Inventory.
CARL		NTS 86N-12 LAT 67°44' LONG 117°35'35"	Copper 2%	0.113 million	National Mineral Inventory.
COATES LAKE	Redstone Resources Limited	NTS 95L-10 LAT 62°41'30" LONG 126°37'30"	Copper 3.9% Silver 11.3 g/t	37 million	One mineralized bed 1m thick. Tonnage is drill indicated. Possible resource is 227 million t. Redstone Resources press release, Feb. 16, 1983.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Copper (cont'd)		
COPPER LAMB		NTS 86N-10 LAT 67°37'55" LONG 116°51'45"	Copper 44.44 - 49.94%	unknown	Series of generally narrow (0.91m) copper bearing veins. veins. National Mineral Inventory.
CORONATION	Range Industries Limited	NTS 86N-8 LAT 67°27' LONG 116°27'	Copper 2.89%	0.119 million	National Mineral Inventory.
DICK	Pickle Crow Exploration Limited	NTS 86N-8 LAT 67°20'08" LONG 116°01'33"	Copper 8.78%	0.056 million	National Mineral Inventory.
GW	Westfield Minerals Limited	NTS 86K-5 LAT 66°26'43" LONG 117°31'25"	Copper 8.4%	0.091 million	National Mineral Inventory.
JAY	Shell Canada Resources Limited	NTS 95M-13 LAT 63°49' LONG 127°46'	Copper 2.2%	1.09 million	National Mineral Inventory.
JUNE	Bernack Coppermine Exploration Limited	NTS 86O-11 LAT 67°34'25" LONG 115°03'30"	Copper 2.5%	0.91 million	National Mineral Inventory.
WRECK LAKE (Dot 47)	Coppermine River Mines Limited	NTS 86N-8 LAT 67°24' LONG 116°23'	Copper 3.07% Silver 8.59 g/t	3.72 million	National Mineral Inventory.
			Copper-Nickel		
FERGUSON LAKE	Inco Limited Esso Minerals Limited	NTS 65I-15 LAT 62°52'00" LONG 96°50'30"	Copper 0.9% Nickel 0.8%	7.3 million	Personal communication, P.J. Laporte, INA, Yellowknife.
MAR	Perry River Nickel Mines Limited	NTS 55K-7 LAT 62°29'30" LONG 92°46'54"	Copper 0.81% Nickel 0.08%	0.064 million	National Mineral Inventory.
PERRY RIVER	Perry River Nickel Mines Limited	NTS 66M-8 LAT 67°28'30" LONG 102°11'30"	Copper 0.5% Nickel 1.25%	unknown	Boulder train occurrence, some copper-nickel mineralization in situ but of lower grade. Location is 'Showing L'. National Mineral Inventory.
RANKIN NICKEL		NTS 55K-16 LAT 62°49'12" LONG 92°04'48"	Copper 0.93% Nickel 3.20% Platinum 3.77 g/t plus Copper 0.93% Nickel 1.25%	405 972 58 514 (Indicated)	Past producer, 1957-62. Grade of platinum given from 1929. No figure for platinum is available from 1957 reserve estimates stated at left, prior to the commencement of mining. Produced 2 631 t copper and 9 662 t nickel from 368 099 t of ore. National Mineral Inventory.
			Copper-Nickel-Chromium		
MUSKOX		NTS 86O-3 LAT 67°03'18" LONG 115°12'12"	Chromium 15.3% Copper 0.25% Nickel 0.15% Platinum) Palladium) minor	4.54 million	INA assessment files.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			TUNGSTEN		
LENED	Union Carbide Canada Limited	NTS 105I-7 LAT 62°22'30" LONG 128°37'	WO_3 1.0%	1 million	National Mineral Inventory.
MACTUNG	Amax Incorporated	NTS 105O-8 LAT 63°17'15" LONG 130°09'	WO_3 0.95% including 1.02%	57.15 million 12.34 million	Deposit straddles Yukon - NWT border. Northern Miner, Dec. 10, 1981 and Mining Magazine, Nov. 1981.
			COAL		
BARTLETT BAY		NTS 39H-3 LAT 79°10' LONG 74°55'	Sub-bituminous	unknown	One 15 foot (4.6m) seam with several other 3 to 5 foot (0.9-1.5m) located in the area. National Mineral Inventory.
BAY FIORD	Petro-Canada Limited	NTS 49H-2 LAT 79°04' LONG 82°00'	Lignite	unknown	One seam 6 or 7 feet (1.8 or 2.1m) thick of Tertiary age. Coal in the Arctic Archipelago, by T.W. Caine, INA, 1973.
BRACKETT BASIN	Manalta Coal Limited Luscar Limited	NTS 96C-14 LAT 64°46'06" LONG 125°23'30"	Lignite A to Sub-Bituminous C including	2 billion 128 million 24 million 82 million 13 million	Large Tertiary coal basin. Fort Norman upper seam, Fort Norman lower seam, Seagull Island upper seam, Seagull Island lower seam. INA assessment files.
BUCHANAN LAKE		NTS 49G-4 LAT 79°12' LONG 87°40'	Unknown rank	unknown	One 6 foot (1.8m) in Isachsen Fm. (Lower Cretaceous). National Mineral Inventory.
CAPE CROZIER		NTS 98E-8 LAT 74°25' LONG 121°30'	Bituminous	unknown	One seam varying in thickness from 10 to 15 feet (3-4.6m). Coal in the Arctic Archipelago, by T.W. Caine, INA, 1973.
COAL MINE (Aklavik)		NTS 107B-4 LAT 68°12' LONG 135°25'	Sub-Bituminous A (12,240 BTU)	unknown	Past producer prior to 1939. Three or 4 seams 1-5 feet (0.3-1.5m) thick. National Mineral Inventory.
COAL MINE (Paulatuk)		NTS 97D-5 LAT 69°22'03" LONG 123°33'41"	Lignite	unknown	One of two past producers near Paulatuk, 1936-41 and 1941-55. 9 t of coal mined per year. National Mineral Inventory.
COAL MINE LAKE	Petro-Canada Limited	NTS 117A-9 LAT 68°42' LONG 136°19'	Sub-Bituminous C	unknown	Past producer, 1930's to late 40's from 8 foot (2.4m) seam. Approximately 635 t of coal mined over the life of the mine. Other occurrences in area grade at anthracite. National Mineral Inventory.
MEADOW RIVER	Petro-Canada Limited	NTS 49D-15 LAT 77°58' LONG 81°41'	Lignite	unknown	Five seams varying from 1 to 7 feet (0.3-2.1m) in thickness. Coal in the Arctic Archipelago, by T.W. Caine, INA, 1973.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Coal (cont'd)		
MIDDLE KANGUK	Gulf Resources Limited	NTS 59H-5 LAT 79°16' LONG 91°10'	High volatile bituminous C to sub-bituminous A	unknown	Sixteen coal seams including two 6 foot (1.8m), one 8 foot (2.4m), one 15 foot (4.6m) and one 30 foot (9.1m) seam in Eureka Sound Fm. Coal in the Arctic Archipelago by T.W. Caine, INA, 1973.
SALMON RIVER		NTS 38B-11 LAT 72°38' LONG 78°05'	Sub-Bituminous	unknown	Two locations in the same area were worked from 1925 to 1963 with production averaging 113 t per year from 1954 to 1963. Mineral Industry Report, 1976, Northwest Territories and INA files.
SLIDRE FIORD	Gulf Resources Limited	NTS 49G-15 LAT 79°57' LONG 85°10'	Sub-bituminous	2 billion	Twenty foot (6.1m) seam in Eureka Sound Fm. (Tertiary age). A.E. Schiller in Mining Magazine, July, 1982 estimated 2 billion t of coal amenable to surface mining in Fosheim Peninsula. R.M. Bustin in Arctic, vol. 33, 1980 estimated 21 billion t of coal in same area.
STOR ISLAND		NTS 49G-2 LAT 79°03' LONG 85°50'	Lignite to sub-bituminous	unknown	One seam 7 feet (2.1m) thick Coal in the Arctic Archipelago, by T.W. Caine, INA, 1973.
VENDOM FIORD	Petro-Canada Limited	NTS 49E-3 LAT 78°07' LONG 82°27'	Lignite	unknown	Five seams including one 8 foot (2.4m) seam in Eureka Sound Fm. National Mineral Inventory.
WATERCOURSE VALLEY		NTS 120C-9 LAT 81°44'18" LONG 64°24'	High volatile bituminous A	unknown	Past producer, 1875-76. Twenty foot (6.1m) seam. National Mineral Inventory.
WESTERN KANGUK		NTS 59G-8 LAT 79°17' LONG 92°45'	Unknown rank	unknown	Twenty seams including four 6 foot (1.8m) and one 8 foot (2.4m) seam in Eureka Sound Fm. Coal in the Arctic Archipelago, by T.W. Caine, INA, 1973.
			IRON		
Belcher Islands Area					
HAIG INLET		NTS 34D-6 LAT 56°20' LONG 79°05'	Iron 27%	907 million	Mineralization is magnetite and hematite. INA files and National Mineral Inventory.
INNETALLING ISLAND		NTS 33M-14 LAT 55°53' LONG 79°02'	Iron 32%	816 million	Mineralization is magnetite and was drilled in 1955 and 1956. National Mineral Inventory and INA files.
BOREALIS EAST	Borealis Exploration Limited	NTS 47A-6 LAT 68°28'05" LONG 82°43'00"	Iron 23-34%	1100 million	Reserves from Exploration and Mining Journal, April, 1982.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
		Iron (cont'd)			
BOREALIS WEST	Borealis Exploration Limited	NTS 47B-2 LAT 68°13'00" LONG 85°29'54"	Iron 32-38%	3200 million	Tonnage from Exploration and Mining Journal, April, 1982.
CHORKBAK INLET		NTS 36B-7 LAT 64°28' LONG 74°42'	Iron 20%	350 million	Four deposits contained 350 million t of 10-20% iron as reported by company in 1957. INA assessment files.
EAST KOROK		NTS 36A-6 LAT 64°20' LONG 73°25'	Iron 30-70%	10 million	Potential indicated in 1958. INA assessment files.
EQE BAY		NTS 37C-9 LAT 69°40'24" LONG 76°48'20"	Iron 32-45%	360 million	National Mineral Inventory.
ICE		NTS 55E-4 LAT 61°05' LONG 95°45'	Iron 29-40%	400 million	Tonnage from Geological Survey of Canada Open File 716 (p. 29), 1981.
MALTBY LAKE		NTS 36C-13 LAT 64°55' LONG 77°56'	Iron 34%	200 million	National Mineral Inventory. INA assessment files.
MARY RIVER	Baffinland Iron Limited	NTS 37G-5 LAT 71°19' LONG 79°21'	Iron 68% plus Iron 30%	260 million 500 million	Canadian Mines Handbook reported 112 million t of 68.13% iron based on 1963-64 drilling. Reserves from Geological Survey of Canada Open File 716 (p.29), 1981.
NASTAPOKA ISLANDS		NTS 34C-2 LAT 56°15' LONG 76°40'	Iron 30%	400 million	National Mineral Inventory.
		URANIUM			
Baker Lake Area					
AMER LAKE	Aquitaine Company of Canada Limited	NTS 66H-10 LAT 65°32'54" LONG 96°45'12"	Uranium n.a.* Molybdenum n.a.*	unknown	National Mineral Inventory.
BAKER LAKE - NORTH SHORE (68-2)	Aberford Resources Limited	NTS 56D-2 LAT 64°10'11" LONG 94°33'25"	Uranium 0.13-0.81%	unknown	Up to 1 360 t of U_3O_8 and 910 t of MoS_2. National Mineral Inventory.
			Molybdenum n.a*		
BISSETT CREEK (75-3)	Aberford Resources Limited	NTS 55M-14 LAT 63°47'51" LONG 95°07'44"	Uranium n.a.*	unknown	National Mineral Inventory.
CHRISTOPHER ISLAND (68-1)	Aberford Resources Limited	NTS 56D-2 LAT 64°04'35" LONG 94°32'53"	Uranium 0.04% Molybdenum n.a.*		Greater than 72 t of U_3O_8 and 68 t of MoS_2. National Mineral Inventory.
KAZAN FALLS (68-4)	Aberford Resources Limited	NTS 55M-12 LAT 63°41'25" LONG 95°46'41"	Uranium 0.46%	unknown	455 t of U_3O_8 in fracture system 1.8m wide and 90m deep (Northern Miner, August, 1974). National Mineral Inventory.
KAZAN RIVER (74-1E)	Aberford Resources Limited	NTS 55M-12 LAT 63°48'22" LONG 95°33'18"	Uranium n.a.*	unknown	National Mineral Inventory.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			Uranium (cont'd)		
KAZAN RIVER (74-1W)	Aberford Resources Limited	NTS 55M-13 LAT 63°48'59" LONG 95°35'09"	Uranium n.a.*	unknown	National Mineral Inventory.
LONE GULL	Urangesellschaft Canada Limited	NTS 66A-5 LAT 64°27' LONG 97°36'	Uranium 1.0% Lead trace-50%	unknown	16 783 t of U_3O_8. CIM Convention, Quebec City, 1982.
HOTTAH LAKE (Cormac)		NTS 86D-9 LAT 64°44'05" LONG 118°11'10"	Uranium 40.5%	unknown	Past producer, 1934. 1.35 t of hand-cobbed ore from trenches produced 463 kg U_3O_8.
LAC CINQUANTE	Aberford Resources Limited	NTS 65J-10 LAT 62°32' LONG 98°38'	Uranium n.a.*	unknown	Estimated resource of 5.26 t U_3O_8. Northern Miner, Oct. 14, 1982.
Mountain Lake Area					
PEC	Aquitaine Company of Canada Limited Cominco Limited	NTS 86N-7 LAT 67°16'18" LONG 116°56'	Uranium n.a.*	unknown	Continuation of YUK mineralization.
YUK	Esso Minerals Limited	NTS 86N-7 LAT 67°18' LONG 116°51'	Uranium 0.26-1.0% Copper up to 5%	unknown	Mineralization in sandstones 20-100m thick over area 1000m x 400m. Yellowknife Geoscience Forum, 1981 and National Mineral Inventory.
Port Radium Area					
CONTACT LAKE	Echo Bay Mines Limited Ulster Petroleums Limited	NTS 86F-13 LAT 65°59'40" LONG 117°48'00"	Uranium n.a.* Silver 1474 g/t	7 303	Past producer, 1934, 1936 - 1939, 1947, 1977, 1979. Tonnage, March, 1981. Produced 3.15 t U_3O_8 in 1939. Silver production for 1934 to 1947 was 14.5 t from approximately 11 000 t of ore. Production in 1977 and 1979 included in silver production of Eldorado mine. National Mineral Inventory and INA files.
ELDORADO	Echo Bay Mines Limited	NTS 86L-1 LAT 66°05'05" LONG 118°02'10"	Uranium n.a.* Copper n.a.* Silver n.a.*	unknown	Producer 1931-1940, 1942-1960, 1977-1982. To 1960 produced 6 808.5 t U_3O_8, 46.655 t silver, 226.8 t cobalt, 127 t nickel, 99.8 t lead, 450 g radium and 1000 microcuries polonium from 1.04 million t of ore. During 1977 to 1982 produced 275.5 t silver and 1 293.3 t copper from 178 622 t of ore. Mine closed in Dec. 1981 and mill closed in March, 1982 after ore reserves depleted. National Mineral Inventory and INA files.
RAYROCK	Rayrock Mines Limited	NTS 85N-7 LAT 63°27'10" LONG 116°33'	Uranium 0.33%	unknown	Past producer, 1957-1959. Produced 207.8 t U_3O_8 from 71 470 t of ore. National Mineral Inventory.

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE	TONNAGE (tonnes)	COMMENTS
			DIAMONDS		
BATTY	Diapros Canada Limited	NTS 58C-8, D-5 LAT 73°21' LONG 92°00'	Diamonds	unknown	Two small diamonds weighing 0.024 and 0.129 carats were recovered in 1974 from 144.6 t of kimberlite. INA assessment files.
NORD	Diapros Canada Limited	NTS 58C-8 LAT 73°27'30" LONG 92°20'	Diamonds	unknown	One diamond weighing 0.142 carats was recovered in 1974 from 12.6 t of kimberlite. INA assessment files.
PEUYUK	Diapros Canada Limited	NTS 58C-3 LAT 73°08' LONG 94°07'	Diamonds	unknown	Three small diamonds weighing 0.0015 carats recovered in 1973 from 1.38 t of kimberlite. INA assessment files.
			OTHER MINERALS		
BIG	Canadian Superior Exploration Limited	NTS 85I-5,12 LAT 62°30' LONG 114°00'	LiO_2 1.5%	1.36 million	National Mineral Inventory.
BLAISDELL LAKE	Beauport Investors Limited	NTS 85I-13 LAT 52°48'37" LONG 113°34'54"	BeO 0.3%	0.181 million	Two dike deposits explored in 1961. National Mineral Inventory.
CAB	New Athona Mines Limited	NTS 85N-10 LAT 63°33'00" LONG 116°44'45"	Bismuth 0.162% Copper n.a.* Cobalt n.a.* Gold n.a.*	0.20 million	Tonnage reported in 1969 from from No.1 zone. National Mineral Inventory.
ECHO (Thor)	Canadian Superior Exploration Limited	NTS 85I-8 LAT 62°25'50" LONG 112°10'50"	LiO_2 1.5%	1.63 million	National Mineral Inventory.
ELK	Hemisphere Development Corporation	NTS 85I-1 NAT 62°12' LONG 112°15'	LiO_2 7.44% Ta_2O_5 0.2-0.75%	0.70 million	Northern Miner, June 5, 1980.
FI	Canadian Superior Exploration Limited	NTS 85I-11 LAT 62°34'57" LONG 113°29'30"	LiO_2 1.37% plus LiO_2 1.1%	4.81 million 6.99 million	National Mineral Inventory.
JAKE	Amhawk Resources Corporation	NTS 85I-6 LAT 62°25'24" LONG 113°21'42"	LiO_2 1.2%	1.81 million	Northern Miner, Dec. 24, 1981.
KI	Canadian Superior Exploration Limited	NTS 85I-11 LAT 62°35'30" LONG 113°28'00"	LiO_2 1.4%	1.81 million	National Mineral Inventory.
LENS	Canadian Superior Exploration Limited	NTS 85I-2 LAT 62°12' LONG 112°41'	LiO_2 1.97%	0.09 million	National Mineral Inventory.

* n.a. - not available

TABLE 4: NORTHWEST TERRITORIES MINERAL DEPOSITS (cont'd)

DEPOSIT	OWNER	LOCATION	MINERALIZATION GRADE		TONNAGE (tonnes)	COMMENTS
			Other Minerals (cont'd)			
NIANTE HARBOUR		NTS 26B-16 LAT 64°53' LONG 66°18'	Mica		unknown	Past producer, 1976. W.A. Mentzer mined 14.5 t of mica worth $120,000 as well as graphite and other industrial minerals. Mineral Developments, Mineral Inventory and Metallogenic Models: Arctic Regions, N.W.T., Canada by W.A. Gibbins in Arctic Geology and Geophysics, 1982.
PEG (Take)	International Bibis Tin Mines Limited	NTS 85I-11 LAT 62°43'40" LONG 113°06'50"	Ta_2O_5) Cb_2O_5)	0.4% combined	unknown	Past producer, 1946-47. Produced 1.715 t of concentrate from 989 t of pegmatite material. National Mineral Inventory.
THOR	Highwood Resources Limited	NTS 85I-2 LAT 62°06'52" LONG 112°35'35"	Cb_2O_5 Ta_2O_5	0.4% 0.03%	63 million	Northern Miner, July 23, 1981. Other rare earths present.
VO	Canadian Superior Exploration Limited	NTS 85I-13 LAT 62°50' LONG 113°34'	LiO_2	1.5%	3.0 million	National Mineral Inventory.

TABLE 5: SOME IMPORTANT MINERAL DISCOVERIES, NORTH OF 60°, 1960-81

NAME OF PROPERTY OR DEPOSIT AND YEAR OF DISCOVERY	COMPANY	LOCATION	TYPE OF DEPOSIT	TONNAGE AND GRADE
LUPIN (Contwoyto) 1960	Canadian Nickel Company Limited	Contwoyto Lake, 330 km east of Great Bear Lake, N.W.T.	Gold associated with sulphides in Archean amphibolite	2.19 million t at 12 g/t Au (Jan. 25, 1982).
CULLATON LAKE (B-Zone) 1961	Selco Exploration Company Limited	Cullaton Lake, 400 km northwest of Churchill, Manitoba	Gold in quartz magnetite iron formation	0.28 million t at 25.4 g/t Au (Dec. 18, 1981).
MACTUNG 1962	Amax Exploration Incorporated	Mt. Allen, 400 km northeast of Whitehorse, Y.T., near Macmillan Pass on the Yukon - N.W.T. border.	Skarn mineralization	57.2 million t at 0.95% WO_3 (Dec. 10, 1981).
POLARIS (Arvik) 1964	Consolidated Mining and Smelting Co. of Canada (now Cominco Limited)	Little Cornwallis Island, N.W.T.	Mississippi Valley type	22.9 million t at 14.1% Zn and 4.3% Pb.
SWIM 1964	Kerr Addison Mines Limited	Faro area, Y.T.	Sedimentary - exhalative type	4.5 million t at 5.5% Zn, 4.0% Pb and 50 g/t Ag.
PYRAMID (Sphinx) 1965	Pyramid Mining Company Limited	Pine Point area, N.W.T.	Mississippi Valley type	8.3 million t at 9.1% Zn and 2.9% Pb.
ANVIL (Faro) 1965	Dynasty Exploration Limited and Cyprus Exploration Limited (now Cyprus Anvil Mining Corporation)	Faro area, Y.T.	Sedimentary - exhalative type	57 million t at 3.4% Pb, 5.7% Zn and 49 g/t Ag for Faro No. 1, 2 and 3 deposits (Oct. 1973). Open pit reserves 34 million t at 4.8% Zn, 3.0% Pb and 37 g/t Ag (Dec. 31, 1981).
HACKETT RIVER 1968	Bathurst Norsemines Limited and Cominco Limited	Hackett River area, 480 km northeast of Yellowknife, N.W.T.	Volcanic - hosted massive sulphide type	19.5 million t at 4.98% Zn, 0.75% Pb, 0.41% Cu, 150 g/t Ag in four deposits (1975) amenable to open pit mining.
HOWARDS PASS (Anniv, XY) 1972	Placer Development Limited	Howards Pass area, Selwyn Mountains, N.W.T. - Y.T. border area	Sedimentary - exhalative type	120 million t drill indicated in all deposits at 5.4% Zn, 2.1% Pb plus geologically inferred reserves in excess of 360 million t. XY high grade zone is 8.1 million t of 10.6% Zn and 5.5% Pb.
GRUM 1973	AEX 73 Syndicate and Kerr Addison Mines Limited	Faro area, Y.T.	Sedimentary - exhalative type	15.6 million t (open pit) at 5.0% Zn, 3.1% Pb and 47 g/t Ag and 10.3 million t (underground) at 9.31% Pb, 8.6% Zn and 89 g/t Ag (1977).
IZOK LAKE 1974	Texasgulf Incorporated (now Kidd Creek Mines Limited)	225 km south of Coronation Gulf, N.W.T.	Volcanic - hosted massive sulphide type	10.9 million t at 13.77% Zn, 2.82% Cu, 1.42% Pb and 70.3 g/t Ag (1976).

TABLE 5: SOME IMPORTANT MINERAL DISCOVERIES, NORTH OF 60°, 1960-81 (cont'd)

NAME OF PROPERTY OR DEPOSIT AND YEAR OF DISCOVERY	COMPANY	LOCATION	TYPE OF DEPOSIT	TONNAGE AND GRADE
JASON 1975	Ogilvie Joint Venture	Macmillan Pass area, N.W.T. - Yukon border	Sedimentary - exhalative type	6.53 million t at 14.6% Pb, 5.5% Zn and 933 g/t Ag (Nov. 26, 1981).
SLAVE REEF 1976	Westmin Resources Limited	Pine Point area, N.W.T.	Mississippi Valley type	7.26 million t of 10.3% combined Pb-Zn (June, 1981).
DY 1976	Cyprus Anvil Mining Corporation	Faro area, Y.T.	Sedimentary - exhalative type	14.7 million t of 5.6% Pb, 7.1% Zn and 84 g/t silver in three zones at depths from 600 to 900 m.
LONE GULL 1977	Urangesellschaft Canada Limited	80 km west of Baker Lake, N.W.T.	Proterozoic unconformity - fault zone type	16 783 t of U_3O_8 at an average grade of 0.4% U_3O_8 (April, 1982).
BONNET PLUME BASIN 1977	Pan Ocean Oil Limited	210 km north of Mayo, Y.T.	Coal basin	Measured and indicated and inferred geological reserves of 650 million t of high volatile b tuminous coal in four deposits.
RED MOUNTAIN 1978	Amoco Canada Petroleum Company Limited	50 km northeast of Whitehorse, Y.T.	Porphyry type	72 million t at 0.22% MoS_2 (Dec. 10, 1981).
DUBLIN GULCH (RAY GULCH) 1979	Canada Tungsten Mining Corporation Limited	10 km northwest of Elsa, Y.T.	Skarn type	7.25 million t at 0.51% WO_3.
ROCK RIVER 1980	Sulpetro Minerals Limited	110 km northeast of Watson Lake, Y.T.	Coal basin	56 million t of lignite A to sub-bituminous C rank coal to a depth of 80m are indicated.

* n.a. - not available

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